ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 80

[EPA-HQ-OAR-2012-0546; FRL-9678-8]

RIN 2060-AR43

Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Under section 211(o) of the Clean Air Act, the Environmental Protection Agency is required to set the renewable fuel standards each November for the following year. In general the standards are designed to ensure that the applicable volumes of renewable fuel specified in the statute are used. However, the statue specifies that EPA is to project the volume of cellulosic biofuel production for the upcoming year and must base the cellulosic biofuel standard on that projected volume if it is less than the applicable volume set forth in the Act. EPA is today proposing a projected cellulosic biofuel volume for 2013 that is below the applicable volume specified in the Act. EPA is proposing that the applicable volumes of advanced biofuel and total renewable fuel would remain at the statutory levels for 2013. Finally, today's action also proposes annual percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and renewable fuels that would apply to all gasoline and diesel produced or imported in year 2013.

DATES: Comments must be received on or before [**insert date 45 days after date of publication in the Federal Register**]. A request for a public hearing must be received by [**insert date 15 days after date of publication in the Federal Register**].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2012-0546, by one of the following methods:

- www.regulations.gov: Follow the on-line instructions for submitting comments.

- Email: a-and-r-docket@epa.gov.
- Mail: Air and Radiation Docket and Information Center, Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460.
- Hand Delivery: EPA Docket Center, EPA West Building, Room 3334, 1301 Constitution Ave., NW., Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2012-0546. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through www.regulations.gov or e-mail. The www.regulations.gov website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through www.regulations.gov your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at http://www.epa.gov/epahome/dockets.htm. For additional instructions on submitting comments, go to Section I.B of the **SUPPLEMENTARY INFORMATION** section of this document.

Docket: All documents in the docket are listed in the www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in www.regulations.gov or in hard copy at the Air and Radiation Docket and Information Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: Julia MacAllister, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor MI 48105; Telephone number: 734-214-4131; Fax number: 734-214-4816; E-mail address: macallister.julia@epa.gov, or the public information line for the Office of Transportation and Air Quality; telephone number (734) 214-4333; E-mail address OTAQ@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

Entities potentially affected by this proposed rule are those involved with the production, distribution, and sale of transportation fuels, including gasoline and diesel fuel or renewable fuels such as ethanol and biodiesel. Potentially regulated categories include:

Category	NAICS[1] Codes	SIC[2] Codes	Examples of Potentially Regulated Entities
Industry	324110	2911	Petroleum Refineries
Industry	325193	2869	Ethyl alcohol manufacturing
Industry	325199	2869	Other basic organic chemical manufacturing
Industry	424690	5169	Chemical and allied products merchant wholesalers
Industry	424710	5171	Petroleum bulk stations and terminals
Industry	424720	5172	Petroleum and petroleum products merchant wholesalers
Industry	454319	5989	Other fuel dealers

[1] North American Industry Classification System (NAICS)
[2] Standard Industrial Classification (SIC) system code.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this proposed action. This table lists the types of entities that EPA is now aware could potentially be regulated by this proposed action. Other types of entities not listed in the table could also be regulated. To determine whether your activities would be regulated by this proposed action, you should carefully examine the applicability criteria in 40 CFR part 80. If you have any questions regarding the applicability of this proposed action to a particular entity, consult the person listed in the preceding section.

B. What Should I Consider as I Prepare My Comments for EPA?

1. Submitting CBI

Do not submit confidential business information (CBI) to EPA through www.regulations.gov or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. Tips for Preparing Your Comments

When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).

- Follow directions - The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree, suggest alternatives, and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified.

Outline of this preamble

I. Executive Summary

The Renewable Fuel Standard (RFS) program began in 2006 pursuant to the requirements in Clean Air Act (CAA) section 211(o) which were added through the Energy Policy Act of 2005 (EPAct). The statutory requirements for the RFS program were subsequently modified through the Energy Independence and Security Act of 2007 (EISA), resulting in the promulgation of major revisions to the regulatory requirements on March 26, 2010[1].

The volumes of renewable fuel to be used under the RFS program each year (absent an adjustment or waiver by EPA) are specified in CAA 211(o)(2). The volumes for 2013 are shown in Table I-1.

Table I-1
Required Applicable Volumes in the Clean Air Act for 2013 (bill gal)

Cellulosic biofuel	1.0[a]
Biomass-based diesel	≥1.0[b]
Advanced biofuel	2.75[a]
Renewable fuel	16.55[a]

[a] Ethanol-equivalent volume
[b] Actual volume. The ethanol-equivalent volume would be 1.5 if biodiesel is used to meet this requirement.

Under the RFS program, EPA is required to determine and publish annual percentage standards for each compliance year by November 30 of the previous year. The percentage standards are used by obligated parties to calculate their individual compliance obligations. The percentage standards are applied to the volume of gasoline and/or diesel fuel that each obligated party produces or imports during the specified calendar year to determine the volumes of renewable fuel that they must cause to be used as transportation fuel, heating oil, or jet fuel. The percentage standards are calculated so as to ensure use in transportation fuel of the "applicable volumes" of four types of biofuel (cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel) that are either set forth in the Clean Air Act or established by EPA in accordance with the Act's requirements.

The cellulosic biofuel industry is transitioning from research and development (R&D) and pilot-scale to commercial scale facilities, leading to increases in production capacity. Construction has begun on several facilities with multiple facilities having progressed to the start-up phase. Based on detailed information from production companies and a consideration of various potential uncertainties, we are projecting that 14 million ethanol-equivalent gallons of cellulosic biofuel will be available in 2013.

We have evaluated the types of advanced biofuels that can be produced or imported in 2013. Our preliminary determination is that there should be sufficient volumes to meet the statutory applicable volume of 2.75 billion gallons. As a result, we are proposing to use that volume to calculate the advanced biofuel standard for 2013. Combined with the availability of conventional biofuels such as corn ethanol, we have preliminarily determined that there should

[1] 75 FR 14670

be sufficient total renewable fuels available in 2013 to meet the statutory applicable volume of 16.55 billion gallons. Therefore, we are not proposing to reduce the advanced biofuel and total renewable fuel applicable volumes below the levels specified in the statute. However, as described in Section III.C, there is some uncertainty in the projected availability of advanced biofuel in 2013. Therefore, we are requesting comment on the possibility of reducing the required volume of advanced biofuel and total renewable fuel in 2013 to reflect this uncertainty.

A. Purpose of This Proposed Action

EPA is today proposing volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel for 2013. Table I.A-1 lists the statutory provisions and associated criteria relevant to determining the applicable volumes in today's proposal. We are also proposing percentage standards for all four categories of renewable fuel for 2013.

Table I.A-1
Statutory Provisions for Determination of Proposed Applicable Volumes

Applicable volumes	Clean Air Act reference	Criteria provided in statute for determination of applicable volume
Cellulosic biofuel in 2013	211(o)(7)(D)(i)	Required volume must be lesser of volume specified in CAA 211(o)(2)(B)(i)(III) or EPA's projected volume.
Advanced biofuel in 2013	211(o)(7)(D)(i)	If applicable volume of cellulosic biofuel is reduced to the projected volume, EPA may reduce advanced biofuel by the same or lesser volume. No other criteria specified.
Total renewable fuel in 2013	211(o)(7)(D)(i)	If applicable volume of cellulosic biofuel is reduced to the projected volume, EPA may reduce total renewable fuel by the same or lesser volume. No other criteria specified.

EPA must annually determine the projected volume of cellulosic biofuel production for the following year. If the projected volume of cellulosic biofuel production is less than the applicable volume specified in section 211(o)(2)(B)(i)(III) of the statute, EPA must lower the applicable volume used to set the annual cellulosic biofuel percentage standard to the projected volume of production. In today's proposal, we present our analysis of cellulosic biofuel production and proposed projected volume for 2013. The analyses that led to the proposed 2013 applicable volume requirement were based on our evaluation of EIA's projection for 2013 as well as individual producers' production plans and progress to date. For the final rule, we will also consider comments received in response to this notice of proposed rulemaking and other information that becomes available.

When we lower the applicable volume of cellulosic biofuel below the volume specified in CAA 211(o)(2)(B)(i)(III), we also have the authority to reduce the applicable volumes of

advanced biofuel and total renewable fuel by the same or a lesser amount. Today's proposal includes our consideration of the 2013 volume requirements for these biofuels.

Based on the applicable volumes for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel presented in today's proposal, we have calculated proposed percentage standards (shown in Section I.B.3 below) that would apply to all producers and importers of gasoline and diesel in 2013. The proposed percentage standards are based on a projection of volumes of gasoline and diesel consumption in 2013 from the Energy Information Administration (EIA).

B. Summary of Major Provisions in This Notice

1. Cellulosic Biofuel Volume for 2013

The cellulosic biofuel industry in the United States continues to make significant advances in its progress towards large scale commercial production. Ongoing research and development work has resulted in increasing product yields, while at the same time lowering enzyme and catalyst costs. New supply chains have been developed, and several companies have reached contract agreements to provide the necessary feedstock for large scale cellulosic biofuel production facilities. Companies are continuing to invest significant sums of money to further refine cellulosic biofuel production technology and to construct the first commercial-scale facilities. From 2007 through the second quarter of 2011 over $2.4 billion was invested in advanced biofuel production companies by venture capitalists alone.[2] For more information on the current status of the cellulosic biofuel industry in the United States and the advances being made, see Section II.B.

2013 is also expected to be a year of transition for the cellulosic biofuel industry, as many companies are shifting their focus from technology development to commercialization. This transition began in 2012 with commercial production facilities from INEOS Bio and KiOR completing construction and scheduled to begin producing fuel in the first quarter of 2013. Abengoa, one of the largest producers of ethanol in the United States, is planning to begin producing cellulosic ethanol at commercial scale by the end of 2013. Several others companies, including DuPont and Poet, expect to be constructing their first commercial scale facilities in 2013, with the intention of beginning production in 2014. If these facilities are able to operate as anticipated, the uncertainty associated with commercial-scale cellulosic biofuel production will decrease, and the expansion of the industry could be rapid.

As part of our effort to estimate the volume of cellulosic biofuel that can be made available in the U.S. in 2013, we researched all potential production sources by company and facility. This included sources that were still in the planning stages, those that were under construction, and those that are already producing some volume of cellulosic ethanol, cellulosic diesel, or some other type of cellulosic biofuel. Facilities primarily focused on research and

[2] Solecki M, Rickey D, Epstein B. Advanced Biofuel Market Report 2011: Meeting the California LCFS. Environmental Entrepreneurs. August 22, 2011. <http://www.e2.org/ext/doc/E2%20Advanced%20Biofuel%20Mkt%20Report%202011.pdf>.

development were not the focus of our assessment as production from these facilities represents very small volumes of cellulosic biofuel, and these facilities typically have not generated RINs for the fuel they have already produced. From this universe of potential cellulosic biofuel sources we identified the subset that could be producing commercial volumes of qualifying cellulosic biofuel for use as transportation fuel in 2013. To arrive at a proposed projected volume for each facility, we took into consideration EIA's company specific projections and factors such as the current and expected state of funding, the status of the technology utilized, progress towards construction and production goals, and other significant factors that could potentially impact fuel production or the ability of the produced fuel to generate cellulosic Renewable Identification Numbers (RINs) in 2013. Further discussion of these factors can be found in Section II.B.

In our assessment we focused on domestic sources of cellulosic biofuel. At the time of this proposal no internationally-based cellulosic biofuel production facilities have registered under the RFS program and therefore no volume from international producers has been included in our projections for 2013. Of the domestic sources, we estimated that up to four facilities may produce commercial-scale volumes of cellulosic biofuel available for transportation use in the U.S. in 2013. Two of these four facilities have made sufficient progress to project that commercial scale production from these two facilities will occur, and we have therefore included production from them in our projected available volume for 2013. All four facilities are listed in Table I.B.1-1 along with our estimate of the projected 2013 volume for each.

Table I.B.1-1
Projected Available Cellulosic Biofuel Plant Volumes for 2013

Company	Location	Fuel type	Capacity (million gallons per year)	First Production (projected)	Projected available volume[a]
Abengoa	Hugoton, KS	Ethanol	24	4Q 2013	0
Fiberight	Blairstown, IA	Ethanol	6	4Q 2013	0
INEOS Bio	Vero Beach, FL	Ethanol	8	1Q 2013	6
KiOR	Columbus, MS	Gasoline and Diesel	11	1Q 2013	8
Total			49		14

[a] Volumes listed in million ethanol-equivalent gallons

The EIA projections, variation in expected start-up times, along with the facility production capacities, company production plans, and a variety of other factors have all been taken into account in predicting the actual volume of cellulosic biofuel that will be produced in 2013. For more detailed information on our projections of cellulosic biofuel in 2013 and the companies we expect to produce this volume see Section II.

2. Advanced Biofuel and Total Renewable Fuel in 2013

The statute indicates that we may reduce the applicable volume of advanced biofuel and total renewable fuel specified in the statute for 2013 if we determine that the projected volume of cellulosic biofuel production for 2013 falls short of the statutory volume of 1.0 billion gallons.

As shown in Table I.B.1-1, we have proposed a finding that this is the case. Therefore, we have also evaluated whether to propose lowering the applicable volumes for advanced biofuel and total renewable fuel. The statute provides no explicit criteria or direction for making this determination. We have focused our evaluation on the availability of renewable fuels that would qualify as advanced biofuel. The CAA specifies an applicable volume of 2.75 billion gallons of advanced biofuel for 2013. To determine whether to lower this volume, we considered the sources that are expected to satisfy any advanced biofuel mandate including: cellulosic biofuel, biomass-based diesel, other domestically-produced advanced biofuels, and imported sugarcane ethanol.

As described in Section II, we project that 14 mill gallons of cellulosic biofuel will be available in 2013. This volume would fulfill 0.014 bill gal of the 2.75 bill gal advanced biofuel requirement.

We have finalized a volume of 1.28 bill gal for 2013 biomass-based diesel in a separate action, and we expect that the vast majority of this requirement will be fulfilled with biodiesel. Since biodiesel has an Equivalence Value of 1.5, 1.28 billion physical gallons of biodiesel would provide 1.92 billion ethanol-equivalent gallons that could be counted towards the advanced biofuel standard of 2.75 billion gallons.

As described in more detail in Section III, we have projected that domestic advanced biofuels are expected to grow steadily through 2013, and would include renewable diesel that does not qualify to be biomass-based diesel, heating oil, biogas used as CNG, and ethanol. We are projecting that about 150 mill gal of domestic advanced biofuels is likely to be available in 2013, which would fulfill 0.15 bill gal of the 2.75 bill gal advanced biofuel requirement.

After taking into account cellulosic biofuel, biomass-based diesel, and domestic advanced biofuels, 666 mill gal of imported sugarcane ethanol would be needed to fulfill the advanced biofuel requirement of 2.75 bill gal. As described in Section III, there is reason to believe that this volume can be exported from Brazil to the U.S. in 2013 given Brazilian production and consumption projections. However, we note that there is some uncertainty in the volumes of Brazilian sugarcane ethanol that could be imported into the U.S. in 2013. This uncertainty arises from the possibility of poor sugarcane crop yields in the next harvest as occurred during the previous harvest, and the interplay between these yields and Brazilian demand for ethanol, world sugar prices, and international demand for biofuels. While most projections indicate that Brazilian sugarcane crop yields will be significantly better in the coming harvest in comparison to the previous harvest, and that as a result sufficient sugarcane ethanol could be produced and exported to the U.S. to help meet the need for 2.75 bill gal advanced biofuel, we nevertheless request comment on whether the advanced biofuel requirement should be reduced to account for this uncertainty.

We also note that in both 2011 and 2012 there was significant two-way trade in ethanol between the United States and Brazil. According to current EIA data, in 2011 the U.S. imported 101 million gallons of sugarcane ethanol from Brazil and exported 396 million gallons of corn-based ethanol to Brazil. Total fuel ethanol exports in 2011 were 1.2 billion gallons, and total exports through October 2012 were 646 million gallons.

Finally, we believe there will be sufficient volumes of conventional renewable fuel including corn-ethanol, combined with advanced biofuel, to satisfy the 16.55 billion gallon applicable volume of total renewable fuel specified in the Act. For instance, corn-ethanol production capacity in 2012 was 14.9 bill gal, compared to the 13.8 bill gal needed to meet the RFS requirements in 2013.[3] We are not proposing to reduce the advanced biofuel volume requirement of 2.75 bill gal, nor the total renewable fuel volume requirement of 16.55 bill gal. However, we are taking comment on lowering the advanced biofuel and total renewable volumes due to various uncertainties. For example, we currently project that 666 mill gal of sugarcane ethanol would need to be imported in order to meet the advanced biofuel volume. However, the recent reinstatement of the biodiesel tax credit introduced uncertainty around those projections, since it affects the amount of biodiesel that may be produced above the required 1.28 bill gal. In addition, the potential for increased domestic demand in Brazil if the 25% biofuel blending requirement is reinstated also introduces uncertainty around the projections. We seek input on these and other such factors that are relevant to how the advanced biofuel volume requirement would be met.

3. Proposed Standards for 2013

The renewable fuel standards are expressed as a volume percentage and are used by each refiner, blender or importer to determine their renewable fuel volume obligations. The applicable percentages are set so that if each regulated party meets the percentages, and if EIA projections of gasoline and diesel use for the coming year are accurate, then the amount of renewable fuel, cellulosic biofuel, biomass-based diesel, and advanced biofuel actually used will meet the volumes required on a nationwide basis.

To calculate the percentage standards for 2013, we have used the proposed projected volume of 14 million ethanol-equivalent gallons of cellulosic biofuel and the volume of biomass-based diesel of 1.28 bill gal that we have finalized in a separate action. The applicable volumes used in this proposal for advanced biofuel and total renewable fuel for 2013 are those specified in the statute. These volumes are shown in Table I.B.3-1.

Table I.B.3-1
Proposed Volumes Used to Determine the Proposed 2013 Percentage Standards[a]

Cellulosic biofuel	14 mill gal
Biomass-based diesel	1.28 bill gal
Advanced biofuel	2.75 bill gal
Renewable fuel	16.55 bill gal

[a] All volumes are ethanol-equivalent, except for biomass-based diesel which is actual.

Four separate standards are required under the RFS program, corresponding to the four separate volume requirements shown in Table I.B.3-1. The specific formulas we use to calculate

[3] "2012 Ethanol Industry Outlook," Renewable Fuels Association, http://ethanolrfa.3cdn.net/d4ad995ffb7ae8fbfe_1vm62ypzd.pdf

the renewable fuel percentage standards are contained in the regulations at §80.1405 and repeated in Section IV.B.1. The percentage standards represent the ratio of renewable fuel volume to projected non-renewable gasoline and diesel volume. The projected volume of transportation gasoline and diesel used to calculate the standards in today's proposed rule was derived from EIA projections.[4] At this time EPA has not approved any small refinery or small refiner exemptions for 2013, and thus no adjustment has been made to the proposed standards to account for such exemptions. The proposed standards for 2013 are shown in Table I.B.3-2. Detailed calculations can be found in Section IV, including the projected 2013 gasoline and diesel volumes used.

Table I.B.3-2
Proposed Percentage Standards for 2013

Cellulosic biofuel	0.008%
Biomass-based diesel	1.12%
Advanced biofuel	1.60%
Renewable fuel	9.63%

4. Biomass-Based Diesel for 2014

While Clean Air Act section 211(o)(2)(B) specifies the volumes of biomass-based diesel through year 2012, it directs the EPA to establish the applicable volume of biomass-based diesel for years after 2012 no later than 14 months before the first year for which the applicable volume will apply. EPA proposed an applicable volume of biomass-based diesel for 2013 on July 1, 2011, and issued a final rule establishing that applicable volume on September 27, 2012[5].

Under 211(o)(2)(B)(ii) EPA, in coordination with the Secretary of Energy and the Secretary of Agriculture, is to establish the applicable volume for biomass based diesel in 2014 based on a review of implementation of the program in prior years and analysis of a number of factors, including biodiesel production capacity, consumption, and infrastructure capabilities, as well as impacts on emissions, costs, energy security, and other factors. While the industry produced around 1.15 bill physical gallons in 2012, we are still evaluating the potential market impacts of this production level. In order to provide sufficient time for this evaluation, as well as the other analyses we are required to conduct, we are not proposing an applicable volume of biomass-based diesel for 2014 in today's NPRM. Instead, we will issue a separate proposal at a later date.

5. Administrative Actions

By November 30 of each year we are required to make several administrative announcements which facilitate program implementation in the following calendar year. These announcements include the cellulosic biofuel waiver credit price and the status of the aggregate

[4] Letter, Adam Sieminski, Administrator, U.S. Energy Information Administration, to Lisa P. Jackson, Administrator, U.S. EPA, October 18, 2012.
[5] 77 FR 59458

compliance approach to land-use restrictions under the definition of renewable biomass for both the U.S. and Canada. Since we did not make these announcements for 2013 by November 30 of 2012, we are here presenting our assessments of these administrative actions. We will provide the final announcements for these administrative actions when we finalize the standards being proposed in today's action.

In the event that we reduce the required volume of cellulosic biofuel for 2013 below the applicable volume specified in the statute, EPA is required to offer biofuel waiver credits to obligated parties that can be purchased in lieu of acquiring cellulosic biofuel RINs. These waiver credits are not allowed to be traded or banked for future use, are only allowed to be used to meet the 2013 cellulosic biofuel standard, and cannot be applied to deficits carried over from 2012. Moreover, unlike cellulosic biofuel RINs, waiver credits may not be used to meet either the advanced biofuel standard or the total renewable fuel standard. For the 2013 compliance period, we estimate that cellulosic biofuel waiver credits could be made available to obligated parties for end-of-year compliance should they need them at a price of $0.42 per credit.

As part of the RFS2 regulations, EPA established an aggregate compliance approach for renewable fuel producers who use planted crops and crop residue from U.S. agricultural land. This compliance approach relieved such producers (and importers of such fuel) of the individual recordkeeping and reporting requirements otherwise required of producers and importers to verify that feedstocks used in the production of RIN-qualifying renewable fuel meet the definition of renewable biomass. EPA determined that 402 million acres of U.S. agricultural land was available in 2007 (the year of EISA enactment) for production of crops and crop residue that would meet the definition of renewable biomass, and determined that as long as this total number of acres is not exceeded, it is unlikely that new land has been devoted to crop production based on historical trends and economic considerations. We indicated that we would conduct an annual evaluation of total U.S. acreage that is cropland, pastureland, or conservation reserve program land, and that if the value exceed 402 million acres, producers using domestically grown crops or crop residue to produce renewable fuel would be subject to individual recordkeeping and reporting to verify that their feedstocks meet the definition of renewable biomass. Based on data provided by the USDA, we have estimated that U.S. agricultural land reached 384 million acres in 2012, and thus did not exceed the 2007 baseline acreage.

On September 29, 2011, EPA approved the use of an aggregate compliance approach to renewable biomass verification for planted crops and crop residue grown in Canada. The Government of Canada utilized several types of land use data to demonstrate that the land included in their 124 million acre baseline is cropland, pastureland or land equivalent to U.S. Conservation Reserve Program land that was cleared or cultivated prior to December 19, 2007, and was actively managed or fallow and nonforested on that date (and is therefore RFS2 qualifying land). The total agricultural land in Canada in 2012 is estimated at 121 million acres. The total acreage estimate of 121 million acres does not exceed the trigger point for further investigation.

C. Impacts of Proposed Actions

Analyses for the March 26, 2010 RFS2 final rule indicated the GHG benefits from cellulosic biofuels compared to the petroleum-based fuels they displace could likely range well above the 60 percent threshold. Therefore, EPA expects that the increase in cellulosic biofuel use that EPA has projected for 2013 over prior year production levels would have directionally beneficial GHG emissions impacts.

For advanced biofuel and total renewable fuel, we are not proposing to reduce the applicable volumes below the volumes required in the statute. All of the impacts of the biofuel volumes specified in the statute were addressed in the RFS2 final rule published on March 26, 2010. Today's rulemaking simply proposes the standards for 2013 advanced biofuel and total renewable fuel whose impacts were previously analyzed. Nevertheless, we recognize that the combination of imports of sugarcane ethanol from Brazil into the U.S. and exports of corn-ethanol from the U.S. to Brazil that may occur as a result of the advanced biofuel volume requirement engenders additional transport related emissions.

II. Projection of Cellulosic Volume for 2013

In order to project the production volume of cellulosic biofuel in 2013 for use in setting the percentage standard, we considered the EIA projections and collected information on individual facilities that have the potential to produce qualifying volumes for consumption as transportation fuel, heating oil, or jet fuel in the U.S. in 2013. This section describes the volumes that we project will be produced or imported in 2013 as well as some of the uncertainties associated with those volumes.

In the past several years the cellulosic biofuel industry has made many significant advances. The production cost of cellulosic biofuels continues to fall as a result of ongoing technology development and operating experience gained from many research and development and demonstration-scale facilities across the country. These important advances include higher biofuel yields per ton of feedstock as well as lower enzyme and catalyst costs. As a result of these yield increases, the projected capital costs and energy costs to produce a gallon of cellulosic biofuel have decreased. New feedstock supply chains, which will be necessary to provide the raw materials for anticipated commercial facilities, have been established, and in several cases companies have signed contracts to obtain significant quantities of feedstocks for their first commercial facilities. These developments, along with the increased availability of project financing, have resulted in the construction of new commercial-scale cellulosic biofuel production facilities. Two commercial-scale facilities are both structurally complete and currently in the start-up phase of operations. Several additional facilities are planning construction in 2013 and start-up in 2014. If these first facilities are successful and operate as designed it will significantly decrease the perceived risk associated with similar future facilities and could potentially lead to the rapid deployment of cellulosic biofuel production facilities around the United States.

Despite significant advances in cellulosic biofuel production technology in recent years, RIN-generating cellulosic biofuel production in 2010 and 2011 was zero despite our projections that the industry was positioned to produce about 6 million gallons in each of those years.[6] In 2010 the majority of the cellulosic biofuel shortfall was met through the use of RINs generated under the RFS1 regulations, and since there were excess RFS1 cellulosic RINs many carried over into the following year. The remaining cellulosic biofuel requirements in 2011 were met through the purchase of cellulosic biofuel waiver credits.[7] A discussion of the reasons for this disparity between our projections and subsequent production is provided in Section II.B below.

[6] In the first half of 2010 when the RFS1 program was still effective, some cellulosic biomass ethanol was produced and the RINs generated were valid for demonstrating compliance with the 2010 and 2011 RFS2 cellulosic biofuel standards. However, the RFS1 cellulosic biomass ethanol that was produced was not made from cellulosic feedstocks, but rather was categorized as cellulosic because it was produced in plants using waste materials to displace 90% or more of fossil fuel use under the then-effective definition of cellulosic biomass ethanol in CAA Section 211(o)(1)(A). See also 40 CFR §80.1101(a)(2).

[7] 4,248,338 cellulosic waiver credits were purchased for 2011 compliance according to the EMTS website (information retrieved from the website on December 11, 2012) at a cost of $1.13 per credit. The ethanol-equivalent volume of cellulosic biofuel projected for 2011 and used to calculate the percentage standard for that year was 6.0 million gallons.

In 2012 the first cellulosic RINs were generated under the RFS2 regulations. However, cellulosic biofuel production once again fell far short of our projections in 2012[8].

A. Statutory Requirements

The volumes of renewable fuel to be used under the RFS program each year (absent an adjustment or waiver by EPA) are specified in CAA 211(o)(2). For 2013, the statute specifies a cellulosic biofuel applicable volume requirement of 1.0 bill gal. The statute requires that if EPA determines, based on EIA's estimate, that the projected volume of cellulosic biofuel production for the following year is less than the applicable volume shown in Table II.A-1, then EPA is to reduce the applicable volume of cellulosic biofuel to the projected volume available during that calendar year.

In addition, if EPA reduces the required volume of cellulosic biofuel below the level specified in the statute, the Act also indicates that we may reduce the applicable volumes of advanced biofuels and total renewable fuel by the same or a lesser volume. Our consideration of the 2013 volume requirements for advanced biofuels and total renewable fuel is presented in Section III.

B. Status of the Cellulosic Biofuel Industry

As in previous years, cellulosic biofuel production in the United States in 2011 was limited to small-scale research and development, pilot, and demonstration-scale facilities. Companies such as Abengoa, BP, Coskata, DuPont Danisco, KL Energy, KiOR, Poet, and others successfully operated small-scale facilities in 2011. Several of these facilities, including all that were part of our 2012 volume projections, are discussed in more detail in Section II.C below. While there were numerous small-scale facilities producing cellulosic biofuel in 2011, the total volume of fuel produced was very small. Because of the R&D nature of these small facilities they are neither designed to produce fuel for commercial sale nor required to report the small volumes of fuel they produced. No RINs were generated for volumes that were produced in 2011, despite all of the companies included in the 2011 projections expressing interest and/or intent in doing so. Although EPA has not attempted to accurately assess production volumes, based on generally available information we believe that total production in the United States in 2011 was likely less than one million gallons of cellulosic biofuel across the industry.

Each of the companies included in our 2011 projections for cellulosic biofuel production had different reasons for not generating cellulosic RINs in 2011. DuPont had concerns about their ability to retain the R&D status of their Vonore, TN facility if they generated RINs and sold the cellulosic ethanol they produced from this facility. Fiberight was unable to secure the funding required to complete the modifications to their facility to allow for cellulosic ethanol production. KL Energy finalized an agreement with Petrobras in the second half of 2010 and changed the direction of their facility to focus on using bagasse as a primary feedstock. Finally,

[8] On December 31, 2012 EPA also received a request for a waiver of the 2012 cellulosic biofuel volume requirement from the American Fuel and Petrochemical Manufacturers.

after completing initial production of cellulosic ethanol Range Fuels shut down operations in January 2011 and eventually declared bankruptcy.

While cellulosic biofuel production in the United States remains limited, the industry continues to make significant progress towards producing cellulosic biofuel at prices competitive with petroleum fuels. From 2007 through the second quarter of 2011 venture capitalists invested over $2.4 billion in advanced biofuel companies in North America[9]. Recent advancements in enzyme and catalyst technologies are allowing cellulosic biofuel producers to achieve greater yields of biofuel per ton of feedstock. These advancements have led to lower operational costs as they have driven down the cost for feedstock, energy, and other important inputs on a per gallon basis. For example, the estimated cost of producing cellulosic ethanol using an enzymatic hydrolysis process in 2007 was $4-$8 per gallon.[10] By 2012 the estimated cost of cellulosic ethanol production using the same process had fallen to $2-$3.50 per gallon[11]. The U.S. Department of Energy similarly reports that advancements in cellulosic ethanol technology have resulted in a decrease in modeled costs from approximately $4 per gallon (minimum ethanol selling price) in 2007 to approximately $2.50 per gallon in 2011.[12] The same technological advances have also lowered the capital costs of cellulosic biofuel production facilities per gallon of annual fuel production, as more gallons of biofuel can be produced at a facility without additional equipment or increased feedstock requirements.

As cellulosic biofuel producers gain experience and continue to progress towards commercial-scale biofuel production, it is reasonable to expect that the production costs and capital costs will continue to decline. This is a pattern shown by many new technologies, including renewable and emerging energy technologies. One example which has several similarities to the cellulosic biofuel industry is the experience with the dry mill corn ethanol industry. From 1983, the year in which the first commercial volumes of dry mill ethanol were produced, to 2005 the processing cost of corn ethanol decreased by 45%, while the capital costs of a dry mill ethanol facility decreased by 88%.[13] Many of the drivers for this cost reduction, such as higher ethanol yields, reduced enzyme costs, and better fermentation technologies[14] are also expected to be factors in the lower cellulosic biofuel costs expected in the future. While the cost reduction percentages observed in the dry mill corn ethanol industry are not directly applicable to the cellulosic biofuel industry, the trend of decreasing production and capital costs over time is expected to hold true.

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[9] Solecki M, Rickey D, Epstein B. Advanced Biofuel Market Report 2011: Meeting the California LCFS. Environmental Entrepreneurs. August 22, 2011. Available Online <http://www.e2.org/ext/doc/E2%20Advanced%20Biofuel%20Mkt%20Report%202011.pdf>.

[10] Nielsen, Peder Holk. "The Path to Commercialization of Cellulosic Ethanol – A Brighter Future." PowerPoint Presentation. Conference Call. February 22, 2012. Available Online <http://www.novozymes.com/en/investor/events-presentations/Documents/Cellic3_conf_call_220212.pdf>.

[11] IBID

[12] Department of Energy. Biomass Multi-Year Program Plan. April 2012. DOE/EE-0702. Available Online <http://www1.eere.energy.gov/biomass/pdfs/mypp_april_2012.pdf>.

[13] Hettinga WG, Junginger HM, Dekker SC, Hoogwijk M, McAloon AJ, Hicks KB. Understanding the reductions in US corn ethanol production costs: An experience curve approach. Energy Policy 37 (2009): 190-203. Available Online <http://ddr.nal.usda.gov/bitstream/10113/22550/1/IND44146988.pdf>.

[14] IBID

Another area where significant progress has been made is that of feedstock supply for commercial-scale cellulosic biofuel production facilities. This issue has often been raised as a factor that could hinder the development of the cellulosic biofuel industry as many of the proposed facilities rely on feedstocks, such as agricultural residues or energy crops, for which supply chains have not previously existed. Over the past several years both Abengoa and Poet have been reaching out to farmers in the regions surrounding their first commercial-scale facilities to ensure the availability of the necessary feedstock. Because corn cobs and stover are only seasonally available, using them as a feedstock for a cellulosic biofuel production facility would require significant feedstock storage facilities. In the last two years Abengoa and Poet completed construction of large-scale feedstock storage facilities to ensure adequate supply to their cellulosic biofuel production facilities throughout the year. Both companies successfully completed fall biomass harvests in 2011 and have contracted with local farmers to provide feedstock for their cellulosic ethanol facilities. This supply chain will not only provide feedstock for their first commercial-scale facilities, but also a model that can be re-created at future production facilities.

Several cellulosic biofuel producers are planning to use slash, forest thinnings, and forest product residue or the cellulosic portions of yard waste as feedstock. This material has many qualities that make it desirable as a cellulosic biofuel feedstock. It is generally inexpensive and is readily available in some regions of the United States. It is also available year round rather than seasonally, significantly reducing the need for large-scale feedstock storage facilities. Securing a sufficient quantity of this feedstock for a commercial-scale facility, however, can be challenging. In the summer of 2011 KiOR announced it had signed a feedstock agreement with Catchlight Energy to provide all the necessary slash, forest thinning, and forest product residue for their first commercial-scale facility. While KiOR plans to transition to planted trees for future facilities, KiOR now has secured sufficient feedstock such that they can produce cellulosic biofuel and cellulosic RINs using an existing pathway at their first commercial-scale facility. INEOS Bio also has a long term agreement with Indian River County to provide vegetative waste which will serve as the feedstock for their first facility.

Another appealing feedstock for cellulosic biofuel production is separated municipal solid waste (MSW). MSW is already being collected and transported to a centralized facility, is consistently available throughout the year, and can be obtained for a very low, or even negative cost. MSW often contains contaminants, however, that may make it challenging to process for some cellulosic biofuel technologies. EPA also requires that waste separation plans be submitted and approved prior to any company generating RINs using separated MSW as a feedstock. In June 2012 EPA approved the first waste separation plan under the RFS program for Fiberight's facility in Blairstown, Iowa.

Significant progress has also been made by some companies towards funding the construction of their first commercial-scale facilities. In the early years of the cellulosic biofuel industry several small start-up companies announced plans to build large commercial-scale facilities that were scheduled to begin production in the past few years. The construction of many of these facilities was dependent on the companies raising additional funding, either from venture capitalists, government grants, or loans backed by government guarantees. So far few of the companies that made these early announcements have been able to successfully raise the

necessary funds and begin construction. Securing this funding proved difficult, and when it did not materialize the projects were delayed or cancelled.

The funding profiles of the companies included in our proposed volume for 2013, as well as for many of the companies targeting production in 2014, are markedly different. Many of these projects have already received, and in several cases have closed on loan guarantees and grants offered by DOE or USDA. Other companies have filed for and successfully executed IPOs. Several cellulosic ethanol projects are being self-financed by large companies such as Abengoa and Poet with significant experience in the biofuel, petrochemical, and specialty chemical markets. This solid financial backing has allowed these companies to proceed with construction. Both of the facilities included in our proposed volume for 2013 have already completed the construction of their first commercial production facilities. There is therefore far less uncertainty as to likely production from these two facilities than has been present for most of EPA's earlier projections. The next section provides additional details on the funding and construction status of the projects included in our projected cellulosic biofuel production volumes for 2013.

If these first commercial-scale cellulosic biofuel production facilities are successful, the potential exists for a rapid expansion of the industry in subsequent years. Having successful commercial-scale facilities would not only provide useful information to help maximize the efficiency of future facilities, but would also significantly decrease the technology and scale-up risks associated with cellulosic biofuel production facilities and could lead to increased access to project funding. Fiberight and ZeaChem both plan to build larger-scale facilities (~25 mill gal per year) as soon as they are able to raise the necessary funds. INEOS Bio plans to expand production by building additional units near sources of inexpensive feedstock ranging in size from 8 to 50 million gallons of ethanol per year. They are currently exploring expansion possibilities in the United States and internationally. KiOR has plans for a second commercial-scale facility to be built in Natchez, MS, that will be approximately three times larger (~30 mill gal per year) than their Columbus, MS, plant and plans to break ground at their second facility after their first is fully operational. Abengoa currently anticipates construction of additional cellulosic ethanol facilities at multiple locations, likely including co-locating with some of their existing starch facilities in the US. Poet has a similar expansion strategy to build cellulosic ethanol plants at their grain ethanol facilities, license their technology for use at other grain ethanol facilities, and build cellulosic ethanol facilities that use feedstocks such as rice straw, rice hulls, woody biomass, or energy crops as a feedstock. Poet's goal is to be involved in the production of 3.5 billion gallons of cellulosic ethanol per year by 2022. Several other companies, such as DuPont and Enerkem are also targeting 2014 for the start-up of cellulosic biofuel production facilities and would likely look to build additional facilities relatively quickly if successful. While many of these expansion plans are still in the early stages and are subject to change, they do point to the potential for cellulosic biofuel production to increase rapidly in future years.

C. Cellulosic Biofuel Volume Assessment for 2013

In 2011 no cellulosic biofuel RINs were generated, though some small volumes were produced. Announcements of new projects and project funding, changes in project plans, project delays, and cancellations occurred. Biofuel producers faced not only the challenge of the scale-up of innovative, first-of-a-kind technology, but also the challenge of securing funding in a difficult economy. While the cellulosic biofuel producer tax credit has been extended through 2013, the short-term nature of this incentive and legal challenges to the RFS volumes have caused some technology developers and investors to question the long term RIN value of cellulosic biofuels. The resulting uncertainty may have had an impact on cellulosic biofuel production in 2011 and 2012.

Despite these challenges, there are several factors indicating that significant volumes of cellulosic biofuel are projected to be produced in 2013. Commercial-scale cellulosic biofuel projects from INEOS Bio and KiOR are structurally complete and expected to begin fuel production in the first quarter of 2013 and achieve production rates at or near their nameplate capacities by the end of 2013. Another commercial-scale facility backed by Abengoa, a large company with significant experience in biofuel production, is also scheduled to begin producing cellulosic biofuel in 2013. These facilities are indicative of a shift across the cellulosic biofuel industry from small-scale R&D and demonstration facilities operated by small start-up companies to large commercial-scale facilities backed by large companies, many of which have substantial experience in related industries.

In order to project cellulosic biofuel production for 2013, we have tracked the progress of more than 100 biofuel production facilities. From this list of facilities we used publically available information, as well as information provided by DOE and USDA, to make a preliminary determination of which facilities are the most likely candidates to produce cellulosic biofuel and generate cellulosic biofuel RINs in 2013. Each of these companies was investigated further in order to determine the current status of their facilities and their likely cellulosic biofuel production and RIN generation volumes for the coming years. Information such as the funding status of these facilities, current status of the production technologies, announced construction and production rampup periods, and annual fuel production targets were all considered when we met with senior level representatives of each company to discuss cellulosic biofuel target production levels for 2013. Our projection of the cellulosic biofuel production in 2013 is based on the estimate we received from EIA as well as the individual production projections that emerged from these discussions. A brief description can be found below for each of the companies we believe will produce cellulosic biofuel and make it commercially available in 2013. We will continue to gather more information to help inform our decision regarding the final cellulosic biofuel volume to be required for 2013.

In the sections that follow, we first discuss the cellulosic production facilities that were part of our volume projections for the 2012 compliance year and the progress that they have made. Then we present our consideration of additional facilities that we believe will also produce cellulosic biofuel in 2013.

1. Cellulosic Biofuel Facilities Considered in the 2012 Projections

In the January 9, 2012, final rule that established the required 2012 cellulosic biofuel volume, we identified six production facilities that we projected would produce cellulosic biofuel and make that fuel commercially available in 2012. Five of these production facilities are currently structurally complete and one is planning to retrofit an existing corn ethanol plant with construction beginning in the first half of 2013. Six active facilities have completed the registration process for the RFS program, and are currently able to generate cellulosic RINs. The current status of each of these facilities, including target production levels for each facility in 2013, is discussed below.

API

American Process Inc. (API) is developing a project in Alpena, Michigan capable of producing up to 900,000 gallons of cellulosic ethanol per year from woody biomass. This facility will use a technology developed by API called GreenPower+™. This technology extracts the hemicellulose portion of woody biomass using hot water and hydrolyzes it into sugars. These sugars are then converted to ethanol or other alcohols, while the remaining portion of the woody biomass, containing mostly cellulose and lignin, is processed into wood paneling at a co-located facility. At future, larger-scale facilities API anticipates burning the residual biomass in a boiler to produce renewable steam and electricity as well as cellulosic biofuel.

In January 2010 API received a grant from DOE for up to $18 million for the construction of their demonstration facility. Construction of the Alpena, Michigan facility began in March 2011 and API began commissioning operations at their facility in the summer of 2012. Production start-up is expected to begin in 2013.

Fiberight

Fiberight uses an enzymatic hydrolysis process to convert the biogenic portion of separated MSW and other waste feedstocks into ethanol. They have successfully completed five years of development work on their technology at their small pilot plant in Lawrenceville, Virginia. In 2009 Fiberight purchased an idled corn ethanol plant in Blairstown, Iowa with the intention of making modifications to this facility to allow for the production of 6 million gallons of cellulosic ethanol per year from separated MSW and industrial waste streams. These modifications were scheduled to be completed in 2011, but difficulties in securing funding have resulted in construction at this facility being delayed. In January 2012 Fiberight was offered a $25 million loan guarantee from USDA. Closing on this loan would provide substantially all of the remaining funds required for Fiberight to complete the required modifications at their Blairstown facility. Construction is expected to begin in early spring 2013 and the company expects that it will take approximately 6 months to complete. Additionally, Fiberight's waste separation plan for this facility was approved in June 2012 allowing Fiberight to generate RINs for the cellulosic ethanol they produce using separated MSW as a feedstock. Fiberight is also currently developing a second commercial-scale project based on their MSW "hub and spoke" concept. They anticipate that this facility will begin fuel production in 2014 and will produce approximately 25 million gallons of cellulosic ethanol per year when fully built out.

INEOS Bio

INEOS Bio has developed a process for producing cellulosic ethanol by first gasifying cellulosic feedstocks into a syngas and then using naturally occurring bacteria to ferment the syngas into ethanol. In January 2011 USDA announced a $75 million loan guarantee for the construction of INEOS Bio's first commercial facility to be built in Vero Beach, Florida. This loan was closed in August 2011. This was in addition to the grant of up to $50 million INEOS Bio received from DOE in December 2009. At full capacity, this facility will be capable of producing 8 million gallons of cellulosic biofuel as well as 6 megawatts (gross) of renewable electricity from a variety of feedstocks including yard, agricultural, and wood waste. The facility also plans to use a limited quantity of separated MSW as a feedstock after initial start-up.

On February 9, 2011, INEOS Bio broke ground on this facility. INEOS Bio completed construction on this facility in June 2012 and began full commissioning of the facility. In August 2012 INEOS Bio received approval from EPA for their yard waste separation plan and successfully registered their Vero Beach, FL facility under the RFS program. In October 2012 the facility began producing renewable electricity. INEOS Bio entered the start-up phase of cellulosic ethanol production in November 2012. During this phase the facility was not run continually as facility modifications continued to be made, however a small volume of cellulosic ethanol was successfully produced. INEOS Bio has reported that they plan to be producing cellulosic ethanol at levels near the facility's capacity of 8 million gallons per year throughout 2013. This reported schedule represents a very aggressive ramp-up period. Due to the many challenges of starting up a first-of-a-kind facility and the history of production delays in the cellulosic biofuel industry, EPA believes a more conservative projection is appropriate. For this proposal we project 6 million gallons of cellulosic ethanol from INEOS Bio in 2013. This volume is consistent with what would be expected from this facility assuming a six month straight-line ramp-up period beginning in January 2013. EPA requests comment on the projected available volume from INEOS Bio's facility in 2013, as well as these assumptions for the appropriate ramp-up period for cellulosic biofuel facilities and expectations for production during this ramp-up phase. EPA will monitor INEOS Bio's production output in the time between this proposal and the final rule and will consider that information, together with public comments received in making a final projection. INEOS Bio is also exploring several opportunities for additional cellulosic biofuel production facilities, both in the United States and internationally. INEOS Bio is targeting sources of inexpensive feedstock, primarily waste materials, and sees a market for plants with production capacities ranging from 8 to 50 million gallons per year.

KiOR

KiOR is working to commercialize a technology capable of converting biomass to a biocrude using a process they call Biomass Fluid Catalytic Cracking (BFCC). BFCC uses a catalyst developed by KiOR in a process similar to Fluid Catalytic Cracking currently used in the petroleum industry. The first stage of this process produces a renewable crude oil which is then upgraded to produce primarily gasoline, diesel, and jet fuel as well as a small quantity of fuel oil, all of which are nearly identical to those produced from petroleum.

KiOR's first commercial-scale facility is located in Columbus, Mississippi and is capable of producing approximately 11 million gallons of gasoline, diesel, and jet fuel per year. Construction on this facility began in May 2011 and was completed in September 2012. KiOR's Columbus facility is currently in the start-up phase. They have produced biocrude from cellulosic feedstocks that is in line with their specifications for upgrading to finished transportation fuels. Cellulosic biofuel RINs from this facility are expected in the first quarter of 2013. This facility is funded, in large part, with funds acquired through private equity raises and supplemented by KiOR's $150 million IPO in June 2011. KiOR's current expectations at their Columbus facility are for a start-up[15] period lasting 9-12 months during which they estimate fuel production will be at 30%-50% of the facility capacity after which they plan to approach full production rates at the facility. KiOR has feedstock supply agreements in place to supply all of the required feedstock for their Columbus facility with slash and pre-commercial thinning. They also have off-take agreements with several companies for all of the fuel that will be produced. KiOR has also announced plans to begin work on their second commercial-scale biofuel production facility in Natchez, Mississippi upon the successful start-up of their first facility. It is unlikely this second facility will begin production of biofuel in 2013. For 2013 our proposed production projection is for 5 million gallons (8 million ethanol-equivalent gallons) of cellulosic biofuel from KiOR's Columbus facility. This volume is calculated assuming KiOR will produce at 30% of the facility capacity for the first nine months of 2013 (consistent with a 12 month line-out period beginning in October 2012) followed by three months of production at the nameplate capacity of the facility.[16] These numbers are relatively conservative estimates based on the low end of KiOR's production guidance. EPA believes this is an appropriate approach for this proposal. We will continue to monitor KiOR's production volume in the period between this proposal and the final rule and will use this information, together with the public comments we receive in preparing an updated projection for the final rule.

Blue Sugars

Blue Sugars, formerly KL Energy, has developed a process to convert cellulose and hemicellulose into sugars and ethanol using a combined chemical/thermal-mechanical pretreatment process followed by enzymatic hydrolysis, co-fermentation of C5 and C6 sugars, and distillation to fuel-grade ethanol. This production process is versatile enough to allow for a wide variety of cellulosic feedstocks to be used, including woody biomass and herbaceous biomass such as sugarcane bagasse. In August 2010 Blue Sugars announced a joint development agreement with Petrobras America Inc. As part of the agreement Petrobras has invested $11 million to modify Blue Sugars' 1.5 million gallons per year demonstration facility in Upton, Wyoming to allow it to process bagasse and other biomass feedstocks. The modifications to Blue Sugars' facility were completed in the spring of 2011. In April 2012 Blue Sugars generated approximately 20,000 cellulosic biofuel RINs, the first such RINs generated under the RFS program. Blue Sugars has indicated, however, that the cellulosic ethanol they produced was exported to Brazil for promotional efforts at the Rio +20 conference in Brazil. These RINs

[15] In conversations with KiOR they refer to this as a "line-out" period

[16] EPA is not assuming that this facility will produce at a 30% rate throughout the entire start-up period, but rather projects that cellulosic biofuel production, when averaged over the entire start-up period, will be 30% of the production capacity during that period. Production will likely be very small in the first few months and will ramp up to near full production capacity by the end of the start-up period.

would therefore have to be retired and will not be available to obligated parties to meet their cellulosic biofuel requirements in 2012. The main purpose of the Upton, Wyoming facility is to further refine Blue Sugars' technology in preparation for their first commercial facilities which may be located in the Brazil or the United States.

ZeaChem

ZeaChem successfully completed construction of their demonstration-scale facility in Boardman, Oregon, in October 2012, allowing for the production of ethanol from sugars derived from cellulose and hemi-cellulose. When fully operational, ZeaChem expects this facility will be capable of producing 250,000 gallons of cellulosic ethanol per year. ZeaChem's production process uses a combination of biochemical and thermochemical technologies to produce ethanol and other renewable chemicals from cellulosic materials. The feedstock is first fractionated into two separate streams, one containing sugars derived from cellulose and hemicellulose and the other containing lignin. The sugars are fermented into an intermediate chemical, acetic acid, using a naturally occurring acetogen. The acetic acid is then converted into ethyl acetate, which can then be hydrogenated into ethanol. The hydrogen necessary for this process is produced by gasifying the lignin stream from the cellulosic biomass. Work is currently underway to add additional process modules that will enable ZeaChem to convert the cellulosic ethanol to jet and diesel fuel beginning in 2013.

ZeaChem's process is flexible and is capable of producing a wide range of renewable chemicals and fuels from many different feedstocks. They plan to use both agricultural residues and wood waste at their demonstration facility and have contracts in place for these feedstocks, as well as purpose-grown wood, at their first commercial-scale facility. In January 2012 ZeaChem announced that they had received a $232.5 million conditional loan guarantee offer from USDA for the construction of their first commercial-scale facility, which will have a capacity of at least 25 million gallons per year. ZeaChem currently has agreements in place to provide all of the necessary feedstock for this facility. This facility, however, is not expected to begin producing cellulosic biofuel until late 2014 at the earliest.

2. Facilities not Included in 2012 Projections

In addition to the facilities that were included in our cellulosic biofuel volume projections for the 2012 compliance year, there is one additional facility that we believe will produce volumes in 2013. Several other large production facilities are planning to begin production of cellulosic biofuel in 2014.

Abengoa

Abengoa, a large international biofuels company, is one of two new cellulosic biofuels producers expected to begin the production of cellulosic biofuels and RINs from a commercial-scale facility in 2013. Abengoa plans to use an enzymatic hydrolysis technology to convert corn stover and other agricultural waste feedstocks into ethanol. After successfully testing and refining their technology at a pilot-scale facility in York, Nebraska as well as in a demonstration-

scale facility in Salamanca, Spain, Abengoa is now working towards the completion of their first commercial-scale cellulosic ethanol facility in Hugoton, Kansas. Abengoa has contracts in place to provide the majority of feedstocks necessary for this facility for the next 10 years and successfully completed their first biomass harvest in the fall of 2011. Construction at this facility, which began in September 2011, is expected to take 24 months and be completed in the fourth quarter of 2013. All of the major process equipment for this project has been purchased and all of the required permits for construction have been approved. Abengoa's Hugoton facility is being partially funded by a $132 million Department of Energy (DOE) loan guarantee.

When completed, the Hugoton plant will be capable of processing 700 dry tons of corn stover per day, with an expected annual ethanol production capacity of approximately 24 million gallons. Abengoa plans to begin ramping up production at the facility shortly after completing construction in late 2013 and to be producing fuel at rates near the nameplate capacity in the second quarter of 2014. After successfully proving their technology at commercial-scale in Hugoton, Abengoa currently plans to construct additional similar cellulosic ethanol production facilities, either on greenfield sites or co-locating these new facilities with their currently existing starch ethanol facilities around the United States. While this facility could produce up to 1 million gallons of cellulosic ethanol in 2013 even a slight delay would result in no fuel being produced in 2013. Given the history of delays in the cellulosic biofuels industry we are not including any volume from Abengoa's Hugoton, KS facility in our proposed projected available volume for 2013.

Poet

Poet has also developed an enzymatic hydrolysis process to convert cellulosic biomass into ethanol. Poet has been investing in the development of cellulosic ethanol technology for more than a decade and began producing small volumes of cellulosic ethanol at pilot-scale at their plant in Scotland, SD in late 2008. In January 2012, Poet formed a joint venture with Royal DSM of the Netherlands called Poet-DSM Advanced Biofuels to commercialize and license their cellulosic ethanol technology.

The joint venture's first commercial-scale facility, called Project LIBERTY, will be located in Emmetsburg, Iowa. This facility is designed to process 770 dry tons of corn cobs, leaves, husks, and some stalk per day into cellulosic ethanol. The facility is projected to have an annual production capacity beginning at approximately 20 million gallons per year, increasing over time to 25 million gallons per year. In anticipation of the start-up of this facility, Poet constructed a 22-acre biomass storage facility and had its first commercial harvest in 2010, collecting 56,000 tons of biomass.

Site prep work for Project LIBERTY began in the summer of 2011, and vertical construction of the facility began in the spring of 2012. Poet was awarded a $105 million loan guarantee offer for this project from DOE in July 2011, but with the joint venture decided to proceed without the loan guarantee. This project is expected to be completed by the end of 2013, however at this time EPA is not expecting any commercial cellulosic ethanol production from this facility until 2014. After the completion of Project LIBERTY, Poet plans to build cellulosic ethanol facilities at all of their existing corn ethanol plants. They are also planning to license

their technology for use at other grain ethanol plants, as well as build additional plants that will process wheat straw, rice hulls, woody biomass or herbaceous energy crops. By 2022 Poet has a goal of producing 3.5 billion gallons of cellulosic ethanol per year.

Other companies

There are several more companies planning to begin producing cellulosic biofuel from commercial-scale facilities in 2014. Companies such as DuPont, Enerkem, and several others are all currently targeting 2014 for the start-up of their first commercial facilities. These facilities represent approximately 100 million gallons of additional cellulosic biofuel production capacity. As with the companies discussed above, most of these companies have already begun to develop plans for their successive facilities after the successful completion of their initial projects. While they will not contribute any volume in 2013, and have therefore not been included in our proposed volume, they are a further indication of the potential for the significant growth of the cellulosic biofuel industry in the United States in the near future.

3. Other Potential Sources of Domestic Cellulosic Biofuel

Each of the companies listed in the previous two sections is planning to generate cellulosic biofuel RINs using one of the valid RIN-generating pathways listed in Table 1 to §80.1426. We are also aware of several companies who may be in a position to produce cellulosic biofuel in 2013 but intend to use a production pathway that is not currently approved for RIN generation. Pathways that are currently under evaluation by EPA include transportation fuels derived from landfill biogas such as CNG and cellulosic ethanol produced from corn kernel fiber. If these or other cellulosic biofuel pathways are approved by EPA, they may be used to generate cellulosic biofuel RINs in 2013. Because the date of any final determination on these pathways is uncertain, however, no volume of cellulosic fuel from these pathways has been included in our proposed 2013 cellulosic biofuel projection.

4. Imports of Cellulosic Biofuel

While domestically produced cellulosic biofuels are the most likely source of cellulosic biofuel available in the United States in 2013, imports of cellulosic biofuel produced in other countries may also generate RINs and participate in the RFS program. While the RFS program does provide a financial incentive for companies to import cellulosic biofuels into the United States, the combination of local demand, financial incentives from other governments, and transportation costs for the cellulosic biofuel has resulted in no cellulosic biofuel being imported to the United States thus far. We believe this situation is likely to continue in the near future and have not included any cellulosic biofuel imports in our projections of available volume in 2013.

As in the United States, the production of cellulosic biofuels internationally is currently limited to small-scale research and development, pilot, and demonstration facilities. This is likely to continue to be the case throughout 2013. Two notable exceptions are facilities built and operated by Beta Renewables and Enerkem. Beta Renewables completed construction of their

first commercial-scale facility located in Crescentino, Italy in the summer of 2012. This facility is designed to produce approximately 20 million gallons of cellulosic ethanol per year. Beta Renewables uses an enzymatic hydrolysis process to produce ethanol from local agricultural residues and herbaceous energy crops.

Enerkem is also in the process of building their first commercial-scale facility in Edmonton, Alberta and plans to begin operations in early 2013. Enerkem's facility will use a thermochemical process to produce syngas from MSW and then catalytically convert the syngas to methanol. The methanol can then be sold directly or upgraded to ethanol or other chemical products. At full capacity this facility will be capable of producing 10 million gallons of cellulosic ethanol per year. At this point, neither Beta Renewables nor Enerkem have registered their facilities under the RFS program, a necessary step that must be completed before these companies can generate RINs for any fuel they import into the United States. Both are planning to locate additional plants in the United States in the future and are likely to generate RINs for production from domestic facilities in future years.

5. Projections from the Energy Information Administration

Section 211(o)(3)(A) of the Clean Air Act requires EIA to "...provide to the Administrator of the Environmental Protection Agency an estimate, with respect to the following calendar year, of the volumes of transportation fuel, biomass-based diesel, and cellulosic biofuel projected to be sold or introduced into commerce in the United States." EIA provided these estimates to us on October 18, 2012.[17] With regard to cellulosic biofuel, the EIA estimated that the available volume in 2013 would be 9.6 million gallons (13.1 million ethanol-equivalent gallons). A summary of the commercial scale plants they considered and associated production volumes is shown below in Table II.C.5.

[17] Letter from Adam Sieminski, EIA Administrator to Lisa Jackson, EPA Administrator October 18, 2012.

Table II.C.5
Cellulosic Biofuel Plants Expected to Generate Biofuel RINs for 2013

Mechanical Completion	Company	Location	Product	Design Capacity	EIA Forecast		
					Utilization	Production (Million Gallons)	Ethanol-Equivalent Production (Million Gallons)
2012	INEOS Bio	Vero Beach, FL	Ethanol	8	50%	4.0	4.0
2012	KiOR	Columbus, MS	Liquids	11	50%	5.5	9.0
Various	Various Pilot Plants	Various	Ethanol	1	10%	0.1	0.1
Total Capacity and Production for 2013				20	48%	9.6	13.1

EIA's projections of cellulosic biofuel production in 2013 are very similar to EPA's projections discussed above and summarized in Section II.C.6 below. The lists of companies that EIA and EPA expect to generate cellulosic biofuel RINS in 2013 are the same. There are, however, differences in the volumes of cellulosic biofuel expected to be produced at the production facilities listed. EPA has higher projections of cellulosic biofuel production for INEOS Bio (6 million gallons vs. 4 million gallons) and lower projections for KiOR (8 million ethanol-equivalent gallons vs. 9 million ethanol equivalent gallons). These variations are a result of different methodologies used by EIA and EPA to project biofuel production in future years. Both INEOS Bio and KiOR are structurally complete commercial scale facilities that plan to operate throughout 2013. In their projections EIA has used a utilization rate of 50% for both of these facilities. Rather than use utilization rates to project production, EPA has estimated ramp-up schedules for the both INEOS Bio and KiOR. The ramp-up schedules estimated for these facilities differ from each other and were developed based on information received from the companies and EPA's knowledge of the production processes used by each company. We believe these different ramp-up schedules, which correspond to different effective utilization rates, are appropriate due to the significant differences in the technologies used by INEOS Bio and KiOR to produce cellulosic biofuel. EPA and EIA both considered the timing of the anticipated start up of these facilities along with anticipated ramp-up schedules/utilization rates in projecting volume production for 2013. As both facilities plan to start production at approximately the same time, the difference in the effective utilization rates represented by EPA's projected volumes for these companies is the result of anticipated ramp-up schedules. More information on the ramp-up schedules used by EPA in our projected production volumes for INEOS Bio and KiOR can be found in Section II.C.1 above.

While the cellulosic biofuel volume projections for 2013 provided by EIA are not identical to those being finalized in this rule EPA believes that they are similar enough to support the volumes we are finalizing. Where differences exist they are due to differences in the ramp-up schedules estimated by EPA and the utilization factors used by EIA for the two companies expected to produce cellulosic biofuel in 2013. As discussed above, EPA believes the approach we have taken is appropriate. EPA has interpreted section CAA 211(o)(7)(D) as vesting the authority for making the projection with EPA, and is not re-opening that interpretation for comment in today's proposal. As described in past rulemakings, the statute provides that the projection is "determined by the Administrator based on the estimate provided [by EIA]." Congress did not intend that EPA simply adopt EIA's projection without an independent evaluation. . EPA's consideration of EIA's estimate in developing this proposal is consistent with EPA's consideration of EIA's estimate in the past rulemakings involving a reduction of the volume standard for cellulosic biofuel. EPA's interpretation and implementation of the obligation to base its projection on the EIA estimate recently was upheld in API v. EPA, No. 12-1139, slip op. at 5-9 (D.C. Cir. January 25, 2013).

6. Summary of Volume Projections

The information we have gathered on cellulosic biofuel producers, described above, allows us to project production volumes for each facility in 2013. For the purposes of this proposed rulemaking we have focused on commercial-scale cellulosic biofuel production

facilities. We believe our focus on commercial-scale facilities is appropriate as the industry transitions from small-scale R&D and pilot facilities to large-scale commercial production. It is likely that several small-scale facilities such as API, KL Energy, ZeaChem, and others will also produce some cellulosic biofuel in 2013. Indeed, EIA's projection from such facilities was only 0.1 million gallons in 2013. This volume is quite small in relation to that expected from the two commercial-scale facilities for which we have projected volumes in 2013 (see Table II.C.6-1 below). Additionally, while RINs may be generated for any cellulosic biofuel produced from these small R&D and pilot facilities, historically many have chosen not to do so for a variety of reasons. We are therefore not proposing to include a volume projection from these facilities. We invite comment on this issue.

In 2013 as many as four domestic cellulosic biofuel production facilities have the potential to produce fuel at commercial scale. Each of these facilities is discussed above, and the facility production targets for each are summarized in Table II.C.6-1 below. Two of the companies that have the potential to produce cellulosic biofuel in 2013, Abengoa and Fiberight, are not planning on beginning fuel production until late in the year. Even a small delay in their expected production timeline could result in their failure to produce any cellulosic biofuel in 2013. For the purpose of this proposal, therefore, we are not projecting production from these facilities in 2013 consistent with EIA.

When added together, the total projected production volume from commercial-scale production facilities in the United States in 2013 is 11 million gallons (14 million ethanol-equivalent gallons). This number represents the expected fuel production from each facility, taking into account the EIA estimates and the many factors described in detail above.

Table II.C.6-1
Projected Available Cellulosic Biofuel for 2013

Company Name	Location	Feedstock	Fuel	Design Capacity (MGY)	First Production (projected)	2013 Projected Available Volume (MG)
Abengoa	Hugoton, KS	Corn Stover	Ethanol	24	4th Quarter 2013	0
Fiberight	Blairstown, IA	MSW	Ethanol	6	4th Quarter 2013	0
INEOS Bio	Vero Beach, FL	Vegetative Waste	Ethanol	8	1st Quarter 2013	6
KiOR	Columbus, MS	Wood Waste	Gasoline and Diesel	11	1st Quarter 2013	8
Various Pilot/ Demo Plants	N/A	N/A	N/A	N/A	N/A	0
			Total	49		**14**

D. Proposed Cellulosic Biofuel Volume for 2013

In today's NPRM we are proposing a volume for the 2013 cellulosic biofuel standard that is based on EIA's estimate, production volumes developed in consultation with the companies expected to produce cellulosic biofuel from commercial-scale facilities in 2013, and EPA's judgment. Many factors have been taken into consideration in developing these projections, such as the EIA estimate, the current status of project funding, the status of the production facility, anticipated construction timelines, the anticipated start-up date and ramp-up schedule, feedstock supply, intent to generate RINs, and many others. Moreover, all of the companies included in our 2013 volume projections have invested a significant amount of time and resources developing their technologies at R&D and demonstration-scale facilities prior to the design and construction of their first commercial-scale facilities. The projects have solid financial backing; for example the INOES Bio project is backed by federal loan guarantees. By the time of our final rule the facilities owned by KiOR and INEOS Bio are scheduled to have already begun fuel production, making our 2013 projections more reliable than prior year projections. We believe the sum of these individual projected available volumes (14 million ethanol-equivalent gallons) is a reasonable representation of expected production. This projection reflects EPA's best estimate of what will actually happen in 2013.[18]

It is important to note that the final cellulosic biofuel standard for 2013 may be set at a volume that differs from the proposed volume. This could happen for a variety of reasons, including unexpected project modifications or cancellations or the inclusion of volumes of cellulosic biofuel from sources other than those listed above. For example, the proposed projected available volume of cellulosic biofuel in 2013 discussed above (14 million ethanol-equivalent gallons) does not include potential contributions from cellulosic ethanol produced from corn fiber or transportation fuels derived from landfill biogas such as CNG. Together, these pathways could generate several tens of millions of gallons of ethanol-equivalent renewable fuel. However, since it is uncertain when our evaluation of these pathways will be completed we have not included their volumes in our 2013 projection in this NPRM. If any of these pathways are approved prior to the final rule, additional volume from these sources may be added to the target production volumes listed in Table II.C.5-1 for the final rule.

We will continue to monitor the progress of the cellulosic biofuel industry, in particular the progress of the companies which form the basis of our proposed 2013 volume projection. As time progresses and we are able to track whether or not the cellulosic biofuels producers are able to meet the construction and ramp-up schedules they have presented, and after considering public comments we receive on this proposal, we will have a clearer idea of the appropriate volume of fuel that we can reasonably expect to be produced and made commercially available in 2013.

[18] See API v. EPA, No. 12-1139, slip op. at 10 (D.C. Cir. January 25, 2013).

III. Assessment of Advanced Biofuel and Total Renewable Fuel for 2013

As described in Section I, the volumes of renewable fuel to be used under the RFS2 program each year (absent an adjustment or waiver by EPA) are specified in CAA 211(o)(2). For 2013, the applicable volume of advanced biofuel is 2.75 bill gal and the applicable volume of total renewable fuel is 16.55 bill gal. However, the statute gives EPA the discretion to reduce these volume requirements in the event that the cellulosic biofuel volume requirement is reduced. While we are not proposing to reduce the required volumes of advanced biofuel and total renewable fuel for 2013, we request comment on whether and to what extent a reduction is warranted. We have the discretion to reduce the advanced biofuel volume and the total renewable requirements for 2013 by up to the amount that the cellulosic biofuel volume requirement is reduced (986 mill gal in today's proposal). This section discusses our evaluation of these two volume requirements.

A. Statutory Requirements

According to CAA 211(o)(7)(D)(i), if EPA determines that the projected volume of cellulosic biofuel production for the following year is less than the applicable volume provided in the statute, then EPA must reduce the applicable volume of cellulosic biofuel to the projected volume available during that calendar year. Under such circumstances, EPA also has the discretion to reduce the applicable volumes of advanced biofuel and total renewable fuel by an amount not to exceed the reduction in cellulosic biofuel.

Section 211(o)(7)(D)(i) provides that "For any calendar year in which the Administrator makes such a reduction, the Administrator may also reduce the applicable volume of renewable fuel and advanced biofuels requirement established under paragraph (2)(B) by the same or a lesser volume." Thus Congress authorized EPA to reduce the volume of total renewable fuel "and" advanced biofuels. This indicates a clear Congressional intention that EPA may reduce both the total renewable and advanced biofuel volume together, not one or the other.

This is consistent with the structure of the national volume standards, where the volume standards are nested and are not separate, unrelated standards. Congress established the advanced biofuel standard and its subsets as integral parts of the total renewable fuel standard. The volume requirements are interrelated and work together to achieve the goals of increasing the displacement of fossil fuel and increasing the use of fuels that reduce greenhouse gases. As described in the NPRM for the RFS2 program, we do not believe it would be appropriate to lower the advanced biofuel standard but not the total renewable standard, as doing so would allow conventional biofuels to effectively be used to meet the standards that Congress specifically set for advanced biofuels. See 74 FR 24915. EPA interprets this provision as authorizing EPA to reduce both total renewable fuel and advanced biofuel, by the same amounts, if EPA reduces the volume of cellulosic biofuel. The reductions in total renewable fuel and advanced biofuel can be up to but no more than the amount of reduction in the cellulosic biofuel volume.

Since cellulosic biofuel is also used to satisfy the advanced biofuel standard and the total renewable fuel standard, any reductions in the applicable volume of cellulosic biofuel will also affect the means through which obligated parties comply with these two other standards. Congress established the volume requirements for advanced biofuel and total renewable fuel in conjunction with the specified cellulosic biofuel volumes, as interrelated standards. Therefore it is appropriate to consider a possible reduction in the advanced biofuel and total renewable fuel applicable volumes when EPA reduces the cellulosic biofuel volume below the applicable volume for cellulosic biofuel set forth in the statute.

In 2013 the applicable volume of cellulosic biofuel specified in the statute represents more than a third of the advanced biofuel volume (1.0 bill gal out of 2.75 bill gal), a higher fraction than in any previous year. A substantial reduction in the applicable volume of cellulosic biofuel could potentially also have a substantial impact on the sufficiency of volumes to meet the advanced biofuel and total renewable fuel standards. As described in Section II.D above, we are indeed proposing a projected available volume of cellulosic biofuel for 2013 at significantly below the statutory applicable volume of 1.0 billion gallons. If we were to finalize a cellulosic biofuel applicable volume of 14 mill gallons for 2013, we would have the discretion to reduce the advanced biofuel and total renewable fuel applicable volumes by up to 986 mill gallons (ethanol-equivalent). Therefore, we believe that an investigation into the availability of advanced biofuel and total renewable fuel is warranted.

The statute does not provide any explicit criteria that must be met or factors that must be considered when making a determination as to whether and to what degree to reduce the advanced biofuel and total renewable fuel applicable volumes when we have the discretion under CAA 211(o)(7)(D)(i) to do so. However, in general we believe that it would not be consistent with the energy security[19] and greenhouse gas reduction goals of the statute to reduce the applicable volume of advanced biofuel set forth in the statute if there are sufficient volumes of advanced biofuels available, even if those volumes do not include the amount of cellulosic biofuel that Congress may have desired.

Due to its relevance to RFS volume requirements, we note here that in the summer of 2012 and in light of drought conditions affecting much of the country, Governors from several States and a number of organizations requested a waiver of the national volume requirements for the RFS pursuant to Section 211(o)(7)(A) of the Clean Air Act. The general waiver authority granted in this part of the statute is different from the authority granted in Section 211(o)(7)(D) that allows the advanced biofuel and total renewable fuels volume requirements to be reduced in the event that the cellulosic biofuel volume is reduced. After extensive analysis, review of thousands of comments, and consultation with the Department of Agriculture and the Department of Energy, the EPA on November 27, 2012 published a *Federal Register* decision denying the requests for a waiver.[20] The *Federal Register* notice contains a detailed description of the analysis EPA conducted in conjunction with DOE and USDA, along with a discussion of relevant comments we received through our public comment process.

[19] The energy security analysis took into account both domestic and foreign sources of advanced biofuel.
[20] 77 FR 70752, November 27, 2012.

B. Assessment of Available Volumes of Advanced Biofuel

Renewable fuels that can be used to meet the standard for advanced biofuel include those with Renewable Identification Number (RIN) codes of 3, 4, 5, or 7. Table III.B-1 shows the number of each of these types of RIN that was generated in 2011. For the final rule, we will update our analysis with estimates from 2012.

Table III.B-1
2011 RINs That Qualified to Meet the Advanced Biofuel Standard[21]
(million ethanol-equivalent gallons)

D code	Category	Ethanol	Biodiesel	Renewable diesel	Biogas and heating oil
3	Cellulosic biofuel	0	0	0	0
4	Biomass-based diesel	0	1,600	76	0
5	Advanced biofuel	186	0	27	8
7	Cellulosic diesel	0	0	0	0
Total		1,895			

The total of 1,895 mill ethanol-equivalent gallons is significantly higher than the 1,350 mill gal required in 2011 and nearly as high as the 2012 advanced biofuel requirement of 2,000 mill gal. This result supports our projection in the rulemaking setting the 2012 standards[22] that there was no need to reduce the 2012 advanced biofuel requirement despite the significant reduction in the applicable volume of cellulosic biofuel.

The statutory volume requirement for advanced biofuel in 2013 is 2,750 mill gal, an increase of 750 mill gal over the 2012 requirement of 2,000 mill gal. In order to determine the sufficiency of advanced biofuel volumes to meet a requirement for 2,750 mill gal in 2013, we first accounted for biomass-based diesel and cellulosic biofuels that would be required under the standards we are proposing today. As shown in Table III.B-2, the result is that there would need to be 816 mill ethanol-equivalent gallons of other advanced biofuels in order to meet the total advanced biofuel requirement of 2,750 mill gal.

Table III.B-2
Necessary Volume of Advanced Biofuel (mill gal ethanol-equivalent)

2013 Advanced biofuel applicable volume	2,750
Cellulosic biofuel requirement	14
Biomass-based diesel requirement	1,920[a]
Necessary volume of excess biodiesel, other domestic advanced biofuels, and/or imported sugarcane ethanol	816

[a] In 2011, a substantial majority of biomass-based diesel was biodiesel. Moreover, we expect further increases in biomass-based diesel to be met primarily with expanded biodiesel. Therefore, for this analysis we have

[21] 2011 data from the EPA-Moderated Transaction System (EMTS)
[22] 77 FR 1320, published on January 9, 2012

assumed that the 1.28 bill gal requirement is composed entirely of biodiesel with an equivalence value of 1.5.

We have identified a variety of sources of advanced biofuel that could meet the need for 816 mill gal of additional advanced biofuel, including the following:

- Biodiesel in excess of that required to meet the volume requirement of 1.28 bill gal
- Domestically produced advanced biofuels such as renewable diesel that does not qualify as biomass-based diesel, heating oil and qualifying fuel oil, and ethanol and other qualifying renewable fuels from separated food wastes
- Imported sugarcane ethanol

We have investigated each of these sources as discussed below.

1. Biodiesel

In a separate action, we have finalized a biomass-based diesel volume of 1.28 bill gal for 2013. However, biomass-based diesel volumes above 1.28 bill gal are possible. As of October 2012, the aggregate production capacity of biodiesel plants in the U.S. is estimated to be 2.1 billion gallons per year across 107 facilities.[23] This includes idled plants, those producing at less than full capacity, and those that are producing products other than biodiesel. We expect the time and reinvestment required to ramp up biodiesel production at existing facilities to be likely on the order of 1-2 months, significantly less than the time required to build and begin production at new plants, which takes about a year on average.[24] Thus, restarting idled plants is likely to be a cost-effective way of exceeding the applicable volumes of 1.28 bill gal in 2013 if a demand for such production exists.

Moreover, the biodiesel industry has demonstrated that it can increase production quickly under appropriate circumstances. Total production of biomass-based diesel in 2011 exceeded 1.0 bill gal, compared to a 2010 production of about 380 mill gallons.[25] In response to the NPRM published on July 1, 2011, some stakeholders expressed doubts that such increases could occur by 2012.[26] Nevertheless, based on the single-year increase of more than 600 mill gal in 2011 and the total capacity of existing plants described above, it is possible that the industry could achieve increases in production of both the 280 mill gallon increment that is reflected in the biomass-based diesel requirement for 2013 as well as some "excess" production.

[23] Figures taken from Table 4, "Monthly Biodiesel Production Report," EIA, December 2012..
[24] Based on construction times for new plants listed in Biodiesel Magazine from July 2006 through May 2009.
[25] All values from EMTS. 2010 estimate consists of approximately 209 mill gallons as recorded through EMTS for volume produced under the RFS2 regulations in July through December of 2010, and approximately 171 mill gallons as recorded through RIN generation reports submitted by producers for volume produced under the RFS1 regulations in January through June of 2010.
[26] See comments in docket EPA-HQ-OAR-2010-0133 from the American Petroleum Institute, Marathon Petroleum Company, and the National Petrochemical Refiners Association.

Recently, the tax credit for biodiesel was reinstated after having expired at the end of 2011[27]. This tax credit, applicable retroactively to 2012 and through the end of 2013, may provide additional incentives to produce and consume biodiesel volumes in excess of the 1.28 bill gal requirement. EPA is requesting comment on what effect the tax credit will have on the advanced biofuel production volumes and the whether this would affect the incentives to import sugarcane ethanol and to what extent.

Nevertheless, there are a variety of factors that make the potential for 2013 biodiesel volumes in excess of 1.28 bill gal uncertain. For instance, despite the significant excess production capacity, the industry may not make the necessary preparations for excess production above 1.28 bill gal, such as restarting idled plants or establishing contracts for feedstocks supply, until such time as it becomes clear what the demand for excess biodiesel might be. This might not occur until later in 2013. Moreover, biodiesel production rates are currently and will continue to be at a historic high. The industry that supplies feedstocks for biodiesel production will be adjusting supplies and distribution routes to ensure that the 1.28 bill gal volume requirement is met, and biodiesel distribution and blending infrastructure is being upgraded to ensure that those volumes can be consumed. However, it is unclear if those adjustments and upgrades will be designed to accommodate biodiesel production in 2013 of volumes above 1.28 bill gal. We request comment on the degree to which biodiesel volumes in excess of the 1.28 bill gal requirement might be expected.

2. Domestic Production of Other Advanced Biofuel

Pathways that have been approved for the generation of RINs are provided in the regulations in Table 1 to §80.1426. Apart from ethanol made from sugarcane which is permitted to generate advanced biofuel RINs, there are currently three pathways through which advanced biofuel RINs can be generated. These three are shown in Table III.B.2-1.

[27] "Congress Votes to Reinstate Biodiesel Tax Incentive," January 2, 2013. http://biodiesel.org/news/biodiesel-news/news-display/2013/01/02/congress-votes-to-reinstate-biodiesel-tax-incentive

Table III.B.2-1
Pathways for Advanced Biofuel

Fuel type	Feedstock	Production process requirements
Ethanol	Grain Sorghum	Dry mill process, using only biogas from landfills, waste treatment plants, and/or waste digesters for process energy and for on-site production of all electricity used at the site other than up to 0.15 kWh of electricity from the grid per gallon of ethanol produced, calculated on a per batch basis.
Biodiesel, renewable diesel[28]	Soy bean oil; Oil from annual covercrops; Algal oil; Biogenic waste oils/fats/greases; Non-food grade corn oil	One of the following: Trans-Esterification Hydrotreating Includes only processes that co-process renewable biomass and petroleum
Ethanol, renewable diesel, jet fuel, heating oil, and naphtha	The non-cellulosic portions of separated food waste	Any
Biogas	Landfills[29], sewage waste treatment plants, manure digesters	Any

In addition to producers of biomass-based diesel and cellulosic biofuel, there are many companies either producing or developing technologies to produce "other advanced biofuels." In order to estimate the volumes of other advanced biofuels that could be produced by these companies in 2013, we investigated three sources of data:

Production Outlook Reports. Required under §80.1449 for all registered producers, these reports contain projections of renewable fuel production for each of the next five years.[30]

2011 producers. Data from the EPA-Moderated Transaction System (EMTS) was reviewed to identify parties that produced some RIN-generating advanced biofuel in 2011. Insofar as such parties did not provide a projected 2013 volume in a Production Outlook Report, they were contacted to update their 2013 projected production volume. We will update this analysis with information from 2012 for the final rule.

[28] Our final action on the 2013 biomass-based diesel renewable fuel volume provides further details with regards to which feedstocks we believe will be used to meet that volume. See 77 FR 59458, September 27, 2012.
[29] Biogas from landfills could be generated from separated food waste or yard waste.
[30] While the individual reports have not been published since they include company-specific information that could impact the competitive nature of the industry, we are providing aggregate results in this NPRM.

Additional registered producers. We identified parties that were registered as producers of advanced biofuel under the RFS program, but neither produced RIN-generating volume in 2011 nor provided a projection of 2013 production volume in a Production Outlook Report. We contacted such parties to determine what, if any, volume could be expected in 2013.

Based on these investigations, we identified twenty domestic companies that are expected to produce some other advanced biofuel in 2013. The total projected production volume for these companies in 2013 is about 115 mill actual gallons, or 150 million ethanol-equivalent gallons, as shown in Table III.B.2-2.

Table III.B.2-2
Projected Domestic Production of Other Advanced Biofuel in 2013
(million ethanol-equivalent gallons)

	Ethanol	Renewable diesel	Heating oil	CNG	Total
Production Outlook Reports	31	35	4	0	70
2011 producers	18	18	0	5	41
Other registered producers	0	15	15	9	39
Total	49	68	19	14	150

A projected volume of 150 mill ethanol-equivalent gallons of other advanced biofuel in 2013 is also consistent with a 2011 report released by E2/Environmental Entrepreneurs[31] which estimated that the production capacity of domestic advanced biofuels in 2012 would be about 180 mill gal.

EPA has recently approved an advanced ethanol pathway that is produced from grain sorghum at dry mill facilities using specified forms of biogas for both process energy and most electricity production[32]. Although advanced sorghum ethanol is not reflected in Table III.B.2-2, sorghum ethanol is likely to help meet the 2013 advanced biofuel volume requirements as a number of companies have been making preparations to use this feedstock. We are also currently investigating a variety of other potential RIN-generating pathways for advanced biofuel that could result in additional volumes in 2013. In addition to potential new pathways for cellulosic biofuel that would also count as advanced biofuel as discussed in Section II.D, new pathways for advanced biofuel could include certain butanol processes from corn and certain ethanol processes from barley. We have not yet determined, either through rulemaking or approval of an industry petition, whether these pathways are valid for the generation for advanced biofuel RINs. However, approval of such advanced biofuel pathways could potentially result in 200 million additional ethanol-equivalent gallons of advanced biofuel being qualified to

[31] Solecki, Mary et al, "Advanced Biofuel Market Report 2011, Meeting the California LCFS" August 22, 2011. E2/Environmental Entrepreneurs.
[32] See 77 FR 74592 published on December 17, 2012.

participate in the RFS program. Insofar as any of these pathways are approved in time to be used in 2013, it would increase the volume of domestically-produced advanced biofuels available for 2013 compliance.

3. Imported Sugarcane Ethanol

EPA estimates that if biodiesel production in 2013 does not exceed 1.28 bill gallons, and domestic production of other advanced biofuels is about 150 mill gallons, imports of sugarcane ethanol from Brazil would need to reach 666 mill gal in order for the 2.75 bill gal advanced biofuel requirement to be met. We believe that such volumes can be reasonably expected from Brazil despite some uncertainty in production and export potential.

From the supply perspective, recent production of sugarcane in Brazil has been lower than normally expected due to two factors. First, adverse weather conditions have reduced production.[33] Since the adverse weather conditions are estimated to have reduced cane production by about 4%, a return to normal weather conditions should alone restore approximately 4% of production. Second, the general economic downturn made credit harder to get, delaying the replanting of existing fields. Normally sugarcane fields are replanted every five or six years to maximize yield. However, the lack of available credit caused some growers to delay the expense of this replanting, with the older fields losing production.[34]

Early 2012/13 sugarcane crop year data suggests that, at the very least, production in the 2012/2013 year will not be lower than in 2011/2012. According to UNICA's December 1, 2012 biweekly report of sugar and ethanol production, total ethanol production from the 2012/13 crop in the South Central region was approximately 5.38 billion gallons, up slightly from 5.36 billion gallons this time last year.[35] In September, UNICA projected that the South Central region, the dominant region for ethanol production in Brazil, will produce a total of 5.56 billion gallons for the 2012/13 year.[36] Other regions contributed roughly another 565 million gallons in 2011/12. Based on this, 6.1 billion gallons is a reasonable conservative estimate for total 2012/13 production, assuming no growth at all in production outside the South Central region. By comparison, total ethanol production from the 2011/12 crop was just less than 6 billion gallons.

Some parties expect a more typical trend in sugarcane ethanol production for 2013 and future years, with replanted fields beginning to boost sugarcane production in existing plantations and, in response to increased worldwide demand, a growth in the acres planted with

[33] Gain Report BR110016, October 3, 2011, USDA Agricultural Service. See http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Sugar%20Semi-annual_Sao%20Paulo%20ATO_Brazil_10-3-2011.pdf

[34] On the margin, the high sugar prices may have also encouraged some growers to divert their crop from ethanol production to sugar production. But most cane growers do not have this flexibility with sugarcane mills designed for fixed amounts of refined sugar or ethanol so high sugar prices was likely a contributing factor but not a major cause of reduced sugarcane ethanol production in Brazil.

[35] UNICA, "Harvest update: Biweekly Bulletin", December 1, 2012, http://www.unicadata.com.br/listagem.php?idMn=63.

[36] UNICA, "Estimate for 2012/2013 Sugarcane Harvest of Brazilian South-Central Region", September 20, 2012, http://www.unicadata.com.br/listagem.php?idMn=39.

sugarcane. Increased production is supported by the Brazilian government which announced in February 2012 support for a plan to invest over $8 billion annually to boost cane and ethanol production.[37] Private investment in Brazil is also increasing. For example, Usina de Acucar Santa Terezinha, a Brazilian ethanol producer, recently announced plans to invest almost $300 million in a new mill and sugarcane plantation.[38] All of this suggests that sugarcane and ethanol production in the 2013/14 harvest year (which will begin in April of 2013) will be significantly higher than production over the last two years.

Nevertheless, there remains some uncertainty in the volumes of sugarcane ethanol that could be produced in Brazil in 2013. If weather conditions are unfavorable for another year, ethanol production may not recover from the comparatively low levels in 2011 and early 2012. A study from USDA projects that this may be the case, and concludes that total ethanol exports from Brazil to all countries in 2013 may only reach about 500 mill gallons[39], well short of the 666 mill gal that would be needed as described above. As a result, it is possible that there could be a shortfall of the total advanced biofuel requirement in 2013 under these circumstances.

Brazil's sugarcane ethanol production serves both its domestic market as well as the export market. The government of Brazil sets a minimum ethanol concentration for its gasoline. In 2011, the Brazilian government lowered this concentration to 20%, reflecting the decrease in domestic production. There have been indications that Brazil may raise the minimum ethanol concentration back up by 25% by May of 2013[40], but no formal announcement has been made. Projecting this Brazilian domestic demand into the future can be uncertain since the government can reset the minimum ethanol content at any time; in the past this adjustment has largely been influenced by the price of ethanol (high prices leading to a reduction in the minimum percent). While these historical changes have typically varied by a few percent and have only occurred periodically, they do add another element of uncertainty to any projection of the volumes of ethanol that may be available for export to the U.S. in 2013.

Total exports of ethanol from Brazil depend on ethanol production and demand within Brazil, and have varied significantly over the last decade. The historical maximum occurred in 2008 when 1.35 bill gal was exported, and ongoing efforts to upgrade distribution infrastructure mean that Brazil is capable of exporting around 2 bill gal today. However, actual export volumes in 2010 - 2012 have been significantly below those from previous years. Moreover, imports of ethanol into Brazil also impact the volumes it exports. In both 2011 and 2012 there was significant two-way trade in ethanol between the United States and Brazil. According to current EIA data, in 2011 the U.S. imported 101 million gallons of sugarcane ethanol from Brazil and exported 396 million gallons of corn-based ethanol to Brazil. Total fuel ethanol exports in 2011 were 1.2 billion gallons, and total exports through October 2012 were 646 million gallons. This two-way trade of ethanol engenders additional transport related emissions.

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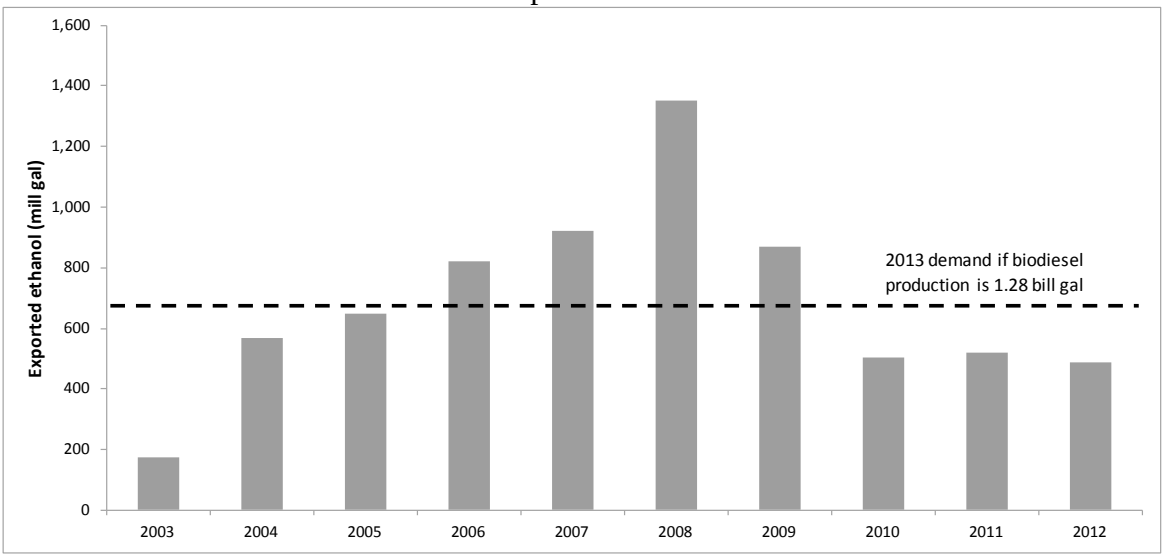
[37] See http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Oil/8987702

[38] See http://www.bloomberg.com/news/2012-03-08/santa-terezinha-invests-283-million-in-brazil-ethanol-projects.html

[39] USDA Foreign Agricultural Service, "Brazil Biofuels Annual, Annual Report 2012," August 21, 2012. GAIN Report Number BR12013.

[40] Bloomberg, "Brazil Said to Plan Higher Ethanol Blend as Early as May," December 18, 2012. http://www.bloomberg.com/news/2012-12-18/brazil-said-to-plan-higher-ethanol-blend-as-early-as-may.html

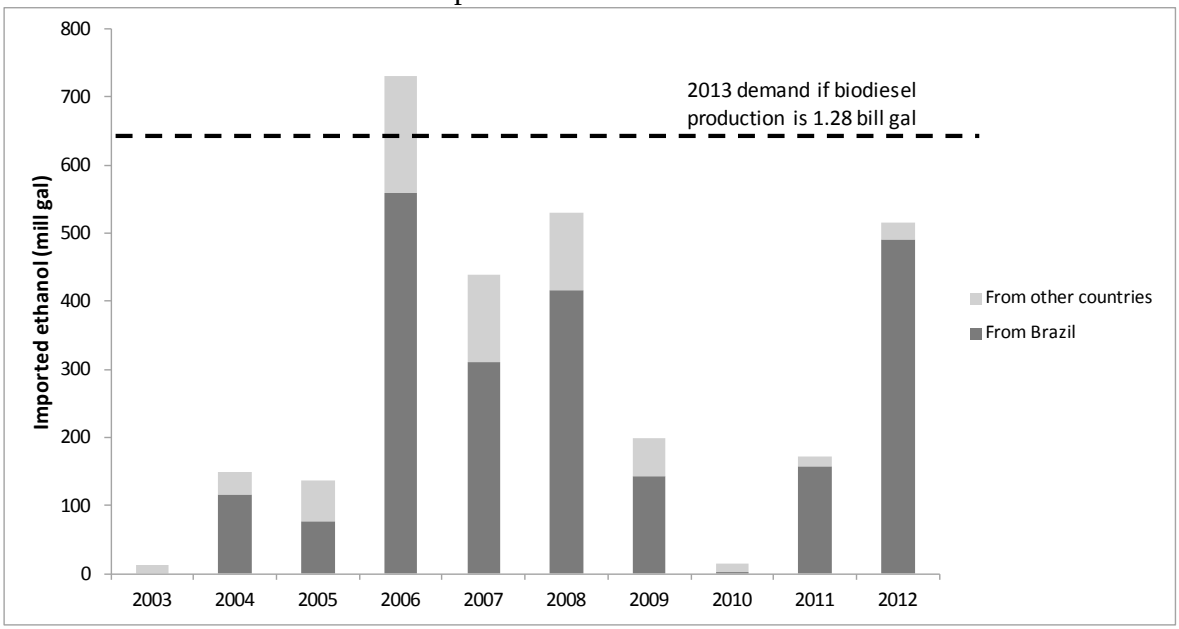
Figure III.B.2-1
Total Worldwide Exports of Ethanol from Brazil



Sources: USDA Foreign Agricultural Service, "Brazil Biofuels Annual, Annual Report 2012", August 21, 2012, BR12013. Constanza Valdez, "Brazil's Ethanol Industry: Looking Forward", BIO-02, ERS, USDA, June 2011

Aside from production capability and domestic demand within Brazil, market conditions generally determine the availability of sugarcane ethanol imported into the U.S. from Brazil. Approved as an advanced biofuel pathway, ethanol produced from sugarcane benefits from the RIN value associated with advanced biofuel but also has to compete with other sources of ethanol used for blending with gasoline in the U.S., most notably ethanol made from corn starch (which does not qualify as an advanced biofuel). The expiration of the tariff applicable to imported ethanol has helped make imported sugarcane ethanol more cost competitive in the U.S., and any volumes of Brazilian sugarcane ethanol imported into California to meet the requirements of their Low Carbon Fuel Standard (LCFS) would also count towards meeting the requirements of the RFS program. However, international demand for Brazilian sugarcane ethanol is expected to continue to create some limitations in what volumes may be available to the U.S. Indeed in 2010 essentially all ethanol exported from Brazil went to other countries, and in 2011 about 70% of ethanol exported from Brazil went to other countries. As a result, imports of Brazilian sugarcane ethanol into the U.S. in 2010 and 2011 were comparatively low. Brazil is on track to meet the need for about 500 mill gal of imported sugarcane ethanol in the U.S. in 2012, but this is below the 666 mill gal that may be needed in 2013 to meet the 2.75 bill gal advanced biofuel requirement. However, since the rate of ethanol imports from Brazil was significantly higher in recent months than at the beginning of 2012, there may be good reason to expect that import volumes in 2013 will be higher than in 2012.

Figure III.B.2-2
Total Imports of Ethanol Into the U.S.



Source: EIA, "U.S. Imports by Country of Origin"

Considering that reinvestment in sugarcane stock is already underway, a considerable resurgence in Brazilian ethanol export potential in the 2013 calendar year seems likely. Any limitations on ethanol exports created by delayed reinvestment in sugarcane stock appear to be waning. While uncertainties exist, on balance there is good reason to believe that Brazil can export at least 666 mill gal of ethanol to the U.S. in 2013.

C. Proposed Volume Requirements for Advanced Biofuel and Total Renewable Fuel in 2013

As shown in Table III.B-2, in order for an advanced biofuel requirement of 2.75 bill gal to be met, there would need to be 816 mill gal of advanced biofuels in addition to the volumes that would need to be produced to meet the biomass-based diesel and proposed cellulosic biofuel requirements. After reviewing the projected availability of advanced biofuel volumes from various sources, we have preliminarily determined that it is likely that there will be sufficient volumes available to produce or import this 816 mill gal. Given our estimate of about 150 mill gal of domestic "other" advanced biofuel, the remaining volume of 666 mill gal would likely need to come from imported sugarcane ethanol and/or biodiesel in excess of 1.28 bill gal. As discussed above, we believe that this volume is achievable through a combination of these sources. Therefore, we believe that there is no reason to reduce the required volume of 2.75 bill gal advanced biofuel on the basis of available volumes. As noted above, maintaining the 2.75 bill gal advanced biofuel volume set forth in the statute will result in reduced GHG emissions from the transportation sector and could also contribute toenergy security objectives. We do not believe it is appropriate to forgo such benefits when they are physically achievable but we invite comment on this issue, particularly in the context of increasing international trade in biofuels and the blendwall implications for ethanol consumption (see discussion in Section D below).

Nevertheless, we recognize that some uncertainty exists in the projected availability of other advanced biofuels. The single largest source, Brazilian sugarcane ethanol, was exported at lower total volumes in 2010 - 2012 than the U.S. would need in 2013 to meet the 2.75 bill gal advanced biofuel requirement. Moreover, the need for 666 mill gal of Brazilian sugar ethanol in 2013 exceeds all historical volumes of ethanol imported into the U.S. from Brazil by a substantial margin. In addition, some stakeholders have stated that given a limited supply, sugarcane ethanol imported into the U.S. may be replaced in the exporting country's domestic market by either non-advanced biofuels, or by petroleum, which these stakeholders believe could lead to adverse GHG impacts. There may be enough uncertainty to warrant a more cautious approach to advanced biofuel and total renewable fuel in 2013, for example a reduction of 200 mill gal to approximate the uncertainty discussed above. Therefore, while we are not proposing to reduce the required volumes of advanced biofuel and total renewable fuel for 2013, we request comment on whether and to what extent a reduction is warranted; we have the discretion to reduce the advanced biofuel volume requirement for 2013 by up to the amount that the cellulosic biofuel volume requirement is reduced (986 mill gal in today's proposal). Were we to do so, as discussed in Section III.A, we would also simultaneously reduce the total renewable fuel requirement by the same amount.

The overall cost impact of reducing the advanced biofuel and total renewable fuel volume mandates would depend on a number of factors, such as the future cost of petroleum, 2012/2013 crop production, the number of additional advanced biofuel pathways that are approved over the next year, and the time it would take for facilities using new advanced pathways to begin generating RINs.

In 2014, the advanced biofuel requirement rises substantially to 3.75 bill gal. Thus regardless of whether we reduce the advanced biofuel and total renewable fuel volume requirements for 2013, we also seek comment on whether such a reduction should be considered for 2014, the basis for such a reduction, and the amount of that reduction.

D. Consideration of the Ethanol Blendwall

As the volume requirements of the RFS program increase, it becomes more likely that the volume of ethanol that must be consumed to meet those requirements will exceed the volume that can be consumed as E10. Additional volumes of ethanol must then be consumed as higher blend levels such as E15 or E85. While other non-ethanol biofuels can also be used to meet the RFS requirements, ethanol has predominated and will likely continue to predominate in the near future. As a result, some stakeholders have indicated that the volume of ethanol that can be legally and practically consumed in 2013 is a limiting factor in how much renewable biofuel can be consumed.

In the context of the analyses conducted to support the decision regarding requests for a waiver of the renewable fuel standard, we estimated that the number of excess RINs generated in 2012 that could be carried over to 2013 will be on the order of 2.6 billion.[41] Since this number

[41] 77 FR 70759

of carryover RINs falls below the rollover cap imposed by §80.1427(a)(5), all of them can be used for compliance purposes in 2013. As a result, we expect that the RFS demand for physical gallons of ethanol will be significantly less than the E10 saturation point (the blendwall), and thus there would be no dependence on significant volumes of E15 - E85 in 2013. This remains the case regardless of whether EPA were to reduce the advanced biofuel and total renewable fuel volume requirements as described in Section III.C above. Nevertheless, we request comment on whether the blendwall presents any difficulty in terms of compliance with the RFS volume requirements in 2013.

In 2014, the situation could be different. There are a number of factors that will play a role in determining how regulated parties will demonstrate compliance with the applicable RFS volumes. First, the advanced biofuel and total renewable fuel requirements rise substantially to 3.75 bill gal and 18.15 bill gal respectively. This increase in volume, combined with the corn-ethanol volume expected to meet the total renewable fuel standard, could cause the total ethanol volume used to comply with the RFS program to be higher than 16 bill gal. While non-ethanol biofuels are also anticipated to continue to grow to help supply the advanced biofuel standard, this value gives some estimate of the amount of ethanol that might need to be used to comply with the RFS program in 2014. Second, the number of carryover RINs will also be a critical factor in determining whether obligated parties can acquire sufficient RINs to show compliance with the RFS volume requirements. However, the number of carryover RINs into 2014 will almost certainly be lower than for 2013. EPA will continue to engage with stakeholders on this issue as we project the RFS volume requirements for 2014.

IV. Proposed Percentage Standards for 2013

A. Background

The renewable fuel standards are expressed as volume percentages and are used by each refiner, blender, or importer to determine their renewable volume obligations (RVO). Since there are four separate standards under the RFS2 program, there are likewise four separate RVOs applicable to each obligated party. Each standard applies to the sum of all gasoline and diesel produced or imported. The applicable percentage standards are set so that if every obligated party meets the percentages, then the amount of renewable fuel, cellulosic biofuel, biomass-based diesel, and advanced biofuel used will meet the volumes required on a nationwide basis.

As discussed in Section II.D, we are proposing a required volume of cellulosic biofuel for 2013 of 11 million gallons (14 million ethanol-equivalent gallons). The volume we select for the final rule will be used as the basis for setting the percentage standard for cellulosic biofuel for 2013. We are also proposing that the advanced biofuel and total renewable fuel volumes would not be reduced below the applicable volumes specified in the statute. The biomass-based diesel volume for 2013 has been established at 1.28 billion gallons through a separate rulemaking. The volumes used to determine the four proposed percentage standards are shown in Table IV.A-1.

Table IV.A-1
Proposed Volumes for Use in Setting the Applicable Percentage Standards for 2013[a]

Cellulosic biofuel	14 mill gal
Biomass-based diesel	1.28 bill gal
Advanced biofuel	2.75 bill gal
Renewable fuel	16.55 bill gal

[a] Due to the manner in which the percentage standards are calculated, all volumes are given in terms of ethanol-equivalent except for biomass-based diesel which is given in terms of physical volume

As with previous years' renewable fuels standards determination, the formulas used in deriving the annual standards are based in part on estimates of the volumes of gasoline and diesel fuel, for both highway and nonroad uses, that are projected to be used in the year in which the standards will apply. Producers of other transportation fuels, such as natural gas, propane, and electricity from fossil fuels, are not subject to the standards, and volumes of such fuels are not used in calculating the annual standards. Since the standards apply to producers and importers of gasoline and diesel, these are the transportation fuels used to set the standards, and then again to determine the annual volume obligations of an individual gasoline or diesel producer or importer.

B. Calculation of Standards

1. How Are the Standards Calculated?

The following formulas are used to calculate the four percentage standards applicable to producers and importers of gasoline and diesel (see §80.1405):

$$Std_{CB,i} = 100\% \times \frac{RFV_{CB,i}}{(G_i - RG_i) + (GS_i - RGS_i) - GE_i + (D_i - RD_i) + (DS_i - RDS_i) - DE_i}$$

$$Std_{BBD,i} = 100\% \times \frac{RFV_{BBD,i} \times 1.5}{(G_i - RG_i) + (GS_i - RGS_i) - GE_i + (D_i - RD_i) + (DS_i - RDS_i) - DE_i}$$

$$Std_{AB,i} = 100\% \times \frac{RFV_{AB,i}}{(G_i - RG_i) + (GS_i - RGS_i) - GE_i + (D_i - RD_i) + (DS_i - RDS_i) - DE_i}$$

$$Std_{RF,i} = 100\% \times \frac{RFV_{RF,i}}{(G_i - RG_i) + (GS_i - RGS_i) - GE_i + (D_i - RD_i) + (DS_i - RDS_i) - DE_i}$$

Where

$Std_{CB,i}$ = The cellulosic biofuel standard for year i, in percent.

$Std_{BBD,i}$ = The biomass-based diesel standard (ethanol-equivalent basis) for year i, in percent.

$Std_{AB,i}$ = The advanced biofuel standard for year i, in percent.

$Std_{RF,i}$ = The renewable fuel standard for year i, in percent.

$RFV_{CB,i}$ = Annual volume of cellulosic biofuel required by section 211(o) of the Clean Air Act for year i, in gallons.

$RFV_{BBD,i}$ = Annual volume of biomass-based diesel required by section 211(o) of the Clean Air Act for year i, in gallons.

$RFV_{AB,i}$ = Annual volume of advanced biofuel required by section 211(o) of the Clean Air Act for year i, in gallons.

$RFV_{RF,i}$ = Annual volume of renewable fuel required by section 211(o) of the Clean Air Act for year i, in gallons.

G_i = Amount of gasoline projected to be used in the 48 contiguous states and Hawaii, in year i, in gallons.

D_i = Amount of diesel projected to be used in the 48 contiguous states and Hawaii, in year i, in gallons.

RG_i = Amount of renewable fuel blended into gasoline that is projected to be consumed in the 48 contiguous states and Hawaii, in year i, in gallons.

RD_i = Amount of renewable fuel blended into diesel that is projected to be consumed in the 48 contiguous states and Hawaii, in year i, in gallons.

GS_i = Amount of gasoline projected to be used in Alaska or a U.S. territory in year i if the state or territory opts-in, in gallons.

RGS_i = Amount of renewable fuel blended into gasoline that is projected to be consumed in Alaska or a U.S. territory in year i if the state or territory opts-in, in gallons.

DS_i = Amount of diesel projected to be used in Alaska or a U.S. territory in year i if the state or territory opts-in, in gallons.

RDS_i = Amount of renewable fuel blended into diesel that is projected to be consumed in Alaska or a U.S. territory in year i if the state or territory opts-in, in gallons.

GE_i = Amount of gasoline projected to be produced by exempt small refineries and small refiners in year i, in gallons, in any year they are exempt per §§80.1441 and 80.1442, respectively. For 2013, this value is zero. See further discussion in Section IV.B.2 below.

DE_i = Amount of diesel projected to be produced by exempt small refineries and small refiners in year i, in gallons, in any year they are exempt per §§80.1441 and 80.1442, respectively. For 2013, this value is zero. See further discussion in Section IV.B.2 below.

The Act requires EPA to base the standards on an EIA estimate of the amount of gasoline and diesel that will be sold or introduced into commerce for that year. The four separate renewable fuel standards for 2013 are based on the gasoline, ethanol, diesel, and biodiesel consumption volumes projected by EIA.[42] We adjusted these nationwide values to represent the 49 states that participate in the RFS program (neither Alaska nor any U.S. territory participates).

[42] Letter, Adam Sieminski, Administrator, U.S. Energy Information Administration, to Lisa P. Jackson, Administrator, U.S. EPA, October 18, 2012.

2. Small Refineries and Small Refiners

In CAA section 211(o)(9), enacted as part of the Energy Policy Act of 2005, Congress provided a temporary exemption to small refineries (those refineries with a crude throughput of no more than 75,000 barrels of crude per day) through December 31, 2010. In our initial rulemaking to implement the new RFS program[43], we exercised our discretion under section 211(o)(3)(B) and extended this temporary exemption to the few remaining small refiners that met the Small Business Administration's (SBA) definition of a small business (1,500 employees or less company-wide) but did not meet the statutory small refinery definition as noted above. 40 CFR §§ 80.1141, 80.1142. Because EISA did not alter the small refinery exemption in any way, the RFS2 program regulations maintained the exemptions for gasoline and diesel produced by small refineries and small refiners through 2010 (unless the exemption was waived). See 40 CFR §§ 80.1441, 80.1442.

Congress provided two ways that small refineries can receive a temporary extension of the exemption beyond 2010. One is based on the results of a study conducted by the Department of Energy (DOE) to determine whether small refineries would face a disproportionate economic hardship under the RFS program. The other is based on EPA determination of disproportionate economic hardship on a case-by-case basis in response to refiner petitions.

In January 2009, DOE issued a study which did not find that small refineries would face a disproportionate economic hardship under the RFS program.[44] The conclusions were based in part on the expected robust availability of RINs and EPA's ability to grant relief on a case-by-case basis. As a result, beginning in 2011 small refiners and small refineries were required to participate in the RFS program as obligated parties, and there was no small refiner/refinery volume adjustment to the 2011 standards as there was for the 2010 standards.

Following the release of DOE's 2009 small refinery study, Congress directed DOE to complete a reassessment and issue a revised report. In March of 2011 DOE re-evaluated the impacts of the RFS program on small entities and concluded that some small refineries would suffer a disproportionate hardship.[45] As a result, EPA exempted these refineries from being obligated parties for two additional years, 2011 and 2012.[46] The 2012 standards established in the January 9, 2012, final rulemaking reflected the exemption of these refineries. We are seeking comment on whether it would be appropriate to extend the two year exemption for small refineries as discussed in section 211 (o)(9)(A)(ii)(II).

EPA may also extend the exemption for individual small refineries or small refiners on a case-by-case basis if they demonstrate disproportionate economic hardship. 40 CFR §§ 80.1441(e)(2), 80.1442(h). EPA has granted some exemptions pursuant to this process that apply in 2011 and 2012. However, at this time, no exemptions have been approved for 2013.

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[43] 72 FR 23900, May 1, 2007.

[44] DOE report "EPACT 2005 Section 1501 Small Refineries Exemption Study", (January, 2009).

[45] "Small Refinery Exemption Study: An Investigation into Disproportionate Economic Hardship," U.S. Department of Energy, March 2011.

[46] Since the standards are applied on an annual basis, the exemptions are likewise on an annual basis even though the determination of which refineries would receive an extension to their exemption did not occur until after January 1, 2011.

Therefore, for this proposal we have calculated the proposed 2013 standards without a small refinery/small refiner adjustment.

Note that if exemptions under Section 211 (o)(9)(A)(ii)(II) were granted before finalizing the standards, or if an individual small refinery or small refiner requests an exemption and is approved following the release of this NPRM and prior to issuance of the final rule, the final standards will be adjusted upward to account for the exempted volumes of gasoline and diesel. Any requests for exemptions that are approved after the release of the final 2013 RFS standards will not affect the 2013 standards. As stated in the final rule establishing the 2011 standards, "EPA believes the Act is best interpreted to require issuance of a single annual standard in November that is applicable in the following calendar year, thereby providing advance notice and certainty to obligated parties regarding their regulatory requirements. Periodic revisions to the standards to reflect waivers issued to small refineries or refiners would be inconsistent with the statutory text, and would introduce an undesirable level of uncertainty for obligated parties." Thus, after the 2013 standards are finalized, any additional exemptions for small refineries or small refiners that are issued will not affect those 2013 standards. EPA requests comment on whether it is appropriate for the agency to make changes to the 2013 volumes if small refiner exemptions are granted after the final rule is issued.

We encourage any producers of gasoline and/or diesel who believe that they may be eligible under the small refinery or small refiner exemption provision to send a petition to the EPA under the provisions of §80.1441 or §80.1442. We believe that the approach EPA is currently using to assess disproportionate economic hardships for small refineries and small refiners appropriately addresses the intent of the statutory provision and the needs of the affected parties.

3. Proposed Standards

As specified in the March 26, 2010 RFS2 final rule[47], the percentage standards are based on energy-equivalent gallons of renewable fuel, with the cellulosic biofuel, advanced biofuel, and total renewable fuel standards based on ethanol equivalence and the biomass-based diesel standard based on biodiesel equivalence. However, all RIN generation is based on ethanol-equivalence. More specifically, the RFS2 regulations provide that production or import of a gallon of qualifying biodiesel will lead to the generation of 1.5 RINs. In order to ensure that demand for 1.28 billion physical gallons of biomass-based diesel will be created in 2013, the calculation of the biomass-based diesel standard provides that the required volume be multiplied by 1.5. The net result is a biomass-based diesel gallon being worth 1.0 gallon toward the biomass-based diesel standard, but worth 1.5 gallons toward the other standards.

The levels of the percentage standards would be reduced if Alaska or a U.S. territory chooses to participate in the RFS2 program, as gasoline and diesel produced in or imported into that state or territory would then be subject to the standard. Neither Alaska nor any U.S. territory has chosen to participate in the RFS2 program at this time, and thus the value of the related terms in the calculation of the standards is zero.

[47] 75 FR 14716, March 26, 2010.

Note that because the gasoline and diesel volumes estimated by EIA include renewable fuel use, we must subtract the total renewable fuel volumes from the total gasoline and diesel volumes to get total non-renewable gasoline and diesel volumes. The values of the variables described above are shown in Table IV.B.3-1.[48] Terms not included in this table have a value of zero.

Table IV.B.3-1
Values for Terms in Calculation of the Standards (bill gal)

Term	Value
$RFV_{CB,2013}$	0.014
$RFV_{BBD,2013}$	1.28
$RFV_{AB,2013}$	2.75
$RFV_{RF,2013}$	16.55
G_{2013}	133.70
D_{2013}	52.26
RG_{2013}	12.85
RD_{2013}	1.23

Using the volumes shown in Table IV.B.3-1, we have calculated the proposed percentage standards for 2013 as shown in Table IV.B.3-2.

Table IV.B.3-2
Proposed Percentage Standards for 2013

Cellulosic biofuel	0.008%
Biomass-based diesel	1.12%
Advanced biofuel	1.60%
Renewable fuel	9.63%

[48] To determine the 49-state values for gasoline and diesel, the amounts of these fuels used in Alaska is subtracted from the totals provided by DOE. The Alaska fractions are determined from the most recent (2010) EIA State Energy Data, Transportation Sector Energy Consumption Estimates. The gasoline and transportation distillate fuel oil fractions are approximately 0.2% and 0.7%, respectively. Ethanol use in Alaska is estimated at 11.2% of its gasoline consumption (based on the same State data), and biodiesel use is assumed to be zero.

V. Public Participation

We request comment on all aspects of this proposal. This section describes how you can participate in this process.

A. How Do I Submit Comments?

We are opening a formal comment period by publishing this document. We will accept comments during the period indicated under the **DATES** section above. If you have an interest in the proposed standards, we encourage you to comment on any aspect of this rulemaking. We also request comment on specific topics identified throughout this proposal.

Your comments will be most useful if you include appropriate and detailed supporting rationale, data, and analysis. Commenters are especially encouraged to provide specific suggestions for any changes that they believe need to be made. You should send all comments, except those containing proprietary information, to our Air Docket (see **ADDRESSES** section above) by the end of the comment period.

You may submit comments electronically, by mail, or through hand delivery/courier. To ensure proper receipt by EPA, identify the appropriate docket identification number in the subject line on the first page of your comment. Please ensure that your comments are submitted within the specified comment period. Comments received after the close of the comment period will be marked "late." EPA is not required to consider these late comments. If you wish to submit Confidential Business Information (CBI) or information that is otherwise protected by statute, please follow the instructions in Section VI.B below.

B. How Should I Submit CBI to the Agency?

Do not submit information that you consider to be CBI electronically through the electronic public docket, www.regulations.gov, or by e-mail. Send or deliver information identified as CBI only to the following address: U.S. Environmental Protection Agency, Assessment and Standards Division, 2000 Traverwood Drive, Ann Arbor, MI, 48105, Attention Docket ID EPA-HQ-OAR-2012-0546. You may claim information that you submit to EPA as CBI by marking any part or all of that information as CBI (if you submit CBI on disk or CD ROM, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

In addition to one complete version of the comments that include any information claimed as CBI, a copy of the comments that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. If you submit the copy that does not contain CBI on disk or CD ROM, mark the outside of the disk or CD ROM clearly that it does not contain CBI. Information not marked as CBI will be included in the public docket without

prior notice. If you have any questions about CBI or the procedures for claiming CBI, please consult the person identified in the **FOR FURTHER INFORMATION CONTACT** section.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a "significant regulatory action" because it raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011) and any changes made in response to OMB recommendations have been documented in the docket for this action.

The economic impacts of the RFS2 program on regulated parties, including the impacts of the required volumes of renewable fuel, were already addressed in the RFS2 final rule promulgated on March 26, 2010 (75 FR 14670). With the exception of cellulosic biofuel, this action proposes the percentage standards applicable in 2013 based on the volumes that were analyzed in the RFS2 final rule.

B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. Burden is defined at 5 CFR 1320.3(b). This proposed rule does not impose any additional reporting requirements on regulated parties beyond those already required under the RFS program; therefore, there will not be any additional reporting burdens on entities impacted by this regulation. This action merely proposes, as required by section 211(o) of the Clean Air Act, the RFS annual standards for 2013.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) a small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's proposed rule on small entities, we certify that this proposed action will not have a significant economic impact on a substantial number of small entities. This rule proposes the annual standard for cellulosic biofuel for 2013 at 14 mill gal. Since small refiners and small refineries collectively comprise about 11.9% of gasoline and 15.2% of diesel production[49], for an average of 12.9% for the entire gasoline + diesel pool, small refiners and small refineries would only be required to collectively meet a cellulosic biofuel requirement of about 1.8 mill gal (14 x 12.9%). At a projected cellulosic biofuel waiver credit price of $0.42, the cost of complying with this requirement would total about $0.76 million for the approximately 60 obligated parties that would be affected, or about $12,600 per facility on average.

The impacts of the RFS2 program on small entities were already addressed in the RFS2 final rule promulgated on March 26, 2010 (75 FR 14670), and this proposed rule will not impose any additional requirements on small entities. However, we continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

This proposed action contains no Federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531-1538 for State, local, or tribal governments or the private sector. This action implements mandate(s) specifically and explicitly set forth by the Congress in Clean Air Act section 211(o) without the exercise of any policy discretion by EPA. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This proposed rule only applies to gasoline, diesel, and renewable fuel producers, importers, distributors and marketers and merely proposes the 2013 annual standards for the RFS program.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This action proposes the 2013 annual standards for the RFS program and only applies to gasoline, diesel, and renewable fuel producers, importers, distributors and marketers. Thus, Executive Order 13132 does not apply to this rule.

[49] Estimates from RFS2 final rule, 75 FR 14867.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This proposed rule will be implemented at the Federal level and affects transportation fuel refiners, blenders, marketers, distributors, importers, exporters, and renewable fuel producers and importers. Tribal governments would be affected only to the extent they purchase and use regulated fuels. Thus, Executive Order 13175 does not apply to this action.

EPA specifically solicits additional comment on this proposed action from tribal officials.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

EPA interprets EO 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it does not establish an environmental standard intended to mitigate health or safety risks and because it implements specific standards established by Congress in statutes (section 211(o) of the Clean Air Act).

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. This action simply proposes the annual standards for renewable fuel under the RFS program for 2013.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are

developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This action does not relax the control measures on sources regulated by the RFS regulations and therefore will not cause emissions increases from these sources.

VII. Statutory Authority

Statutory authority for this action comes from section 211 of the Clean Air Act, 42 U.S.C. 7545. Additional support for the procedural and compliance related aspects of today's proposal, come from Sections 114, 208, and 301(a) of the Clean Air Act, 42 U.S.C. Sections 7414, 7542, and 7601(a).

List of Subjects in 40 CFR Part 80

Administrative practice and procedure, Air pollution control, Diesel fuel, Environmental protection, Fuel additives, Gasoline, Imports, Oil imports, Petroleum.

Dated:

Lisa P. Jackson,
Administrator.

For the reasons set forth in the preamble, 40 CFR part 80 is amended as follows:

PART 80—REGULATION OF FUELS AND FUEL ADDITIVES

1. The authority citation for part 80 continues to read as follows:

Authority: 42 U.S.C. 7414, 7542, 7545, and 7601(a).

2. Section 80.1405 is amended by adding paragraph (a)(4) to read as follows:

§ 80.1405 What are the Renewable Fuel Standards?

(a) * * *

(4) *Renewable Fuel Standards for 2013.*

(i) The value of the cellulosic biofuel standard for 2013 shall be 0.008 percent.

(ii) The value of the biomass-based diesel standard for 2013 shall be 1.12 percent.

(iii) The value of the advanced biofuel standard for 2013 shall be 1.60 percent.

(iv) The value of the renewable fuel standard for 2013 shall be 9.63 percent.